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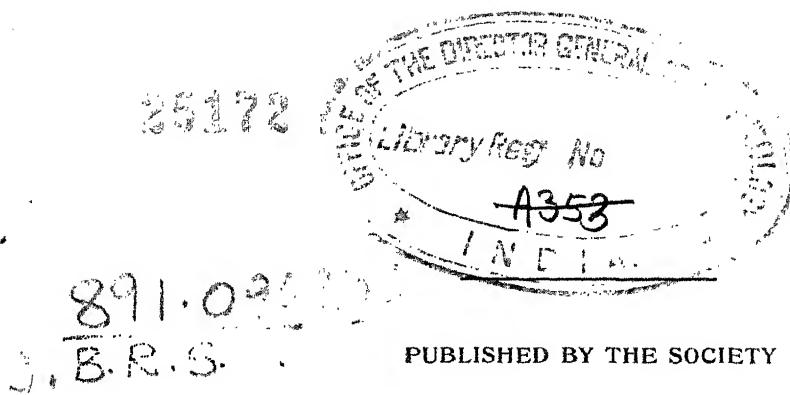


THE JOURNAL  
OF THE  
BURMA RESEARCH SOCIETY



Volume IV

1914



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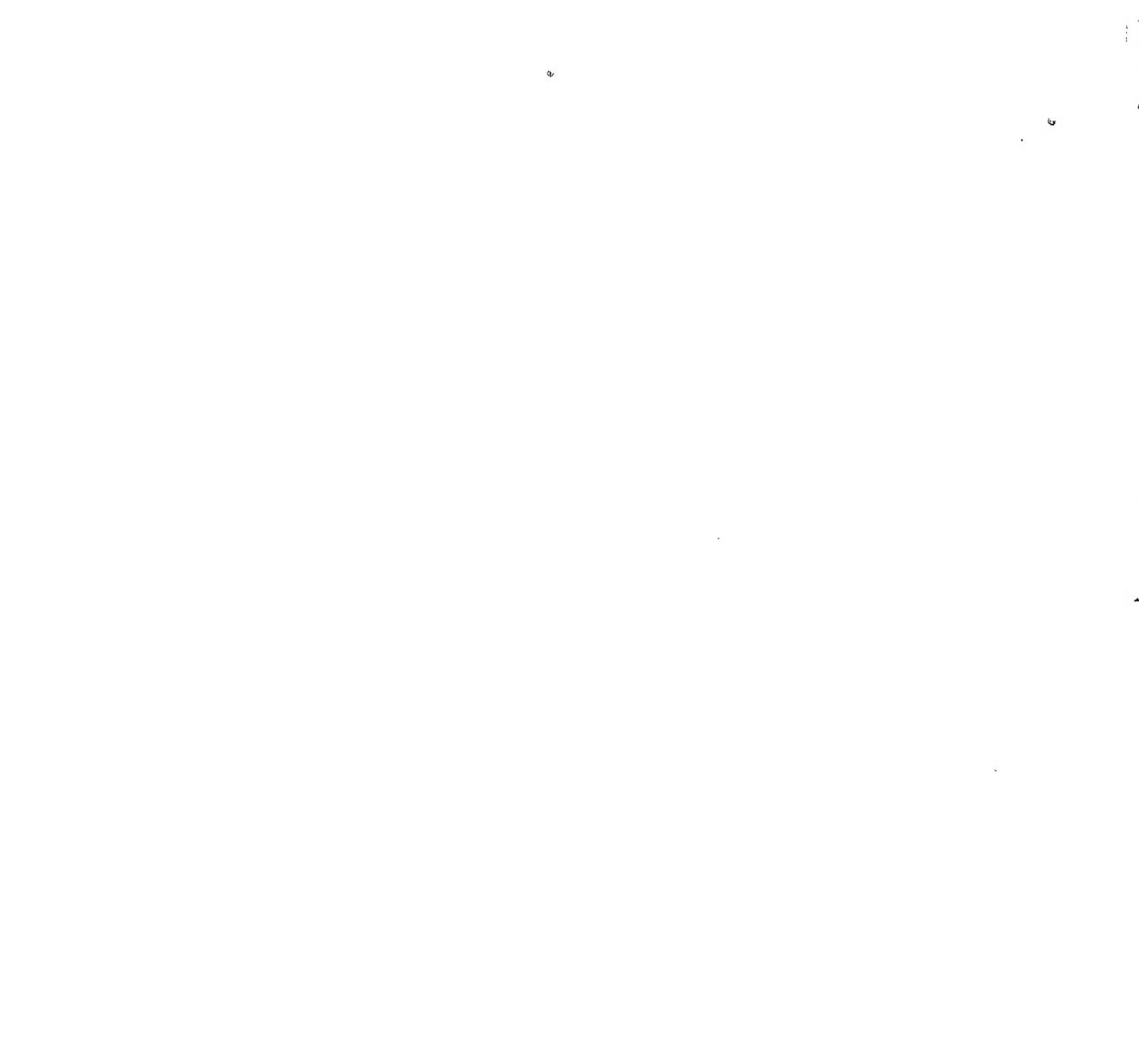
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## CORRECTIONS

<i>Page</i>	<i>Line</i>	<i>For</i>	<i>Read</i>
13	1	vatāparādhaṁ	katāparādhaṁ
13	28	agataṁ	āgataṁ
16	5	(15)	(16)
16	21	become	became
17	in note 29	Asaikhaya-mia	Asaikhaya-min
18	17	Vejanta	Vejayanta
18	42	is	was
21	4, 47	intermittently	uninterruptedly
21	26	law	low
59	23, 45	Ramaññadesa	Rāmaññadesa
72	19	ఎంచుచుండి:	ఎంచుచుండి:
79	8	translation	translator
79	20	lie	he



THE BURMA RESEARCH SOCIETY  
(FOUNDED 1910)

*For the Investigation and Encouragement of Arts, Science and Literature in relation to Burma and neighbouring Countries.*

PATRON.

SIR HARVEY ADAMSON, M. A., LL. D., Kt., K. C. S. I.

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*President.*

FURTHER CORRECTIONS TO THE BURMA RESEARCH SOCIETY'S  
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On page 23, 6th, line from bottom (foot note) *read* "Parahita or" *after* "Siddhanta."

On page 24, 23rd, line from top *for* "Bavari" *read* "Baravi."

On page 43, 1st, line from top *for* "571" *read* "751."

VOLUME IV, PART II.

Page	line	for	read
90	23	from	form
106	20	Cakrama	Caikrama
126	17	aloy a soi	alay a soi
"	43	Kat gáu kit	Kot gáu kit
127	9	ঢ	ঢ
128	31	ঢ	ঢ
"	41	after face , insert	oঢ the head
129	10	„ B. ফুকান্দেজুবৎ „	(Bot. Homalium species).



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129	10	„      B. লেৱাকীলেৱাপন „	(Bot. Homalium species).



## CORRECTIONS.

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121	36	$\frac{c}{4}$ and $\frac{d}{5}$	$\frac{c}{5}$ and $\frac{d}{4}$

q<sub>b</sub>

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## **EDITOR'S NOTE**

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The Editor has made the following changes with regard to the Journal.

1. The size has been enlarged to make it more convenient to print photographs, inscriptions and other plates.
2. The Journal will be brought out three times a year—in April, August and December—so as to arouse more interest than has hitherto been felt.
3. The List of members will be published in the December number only.

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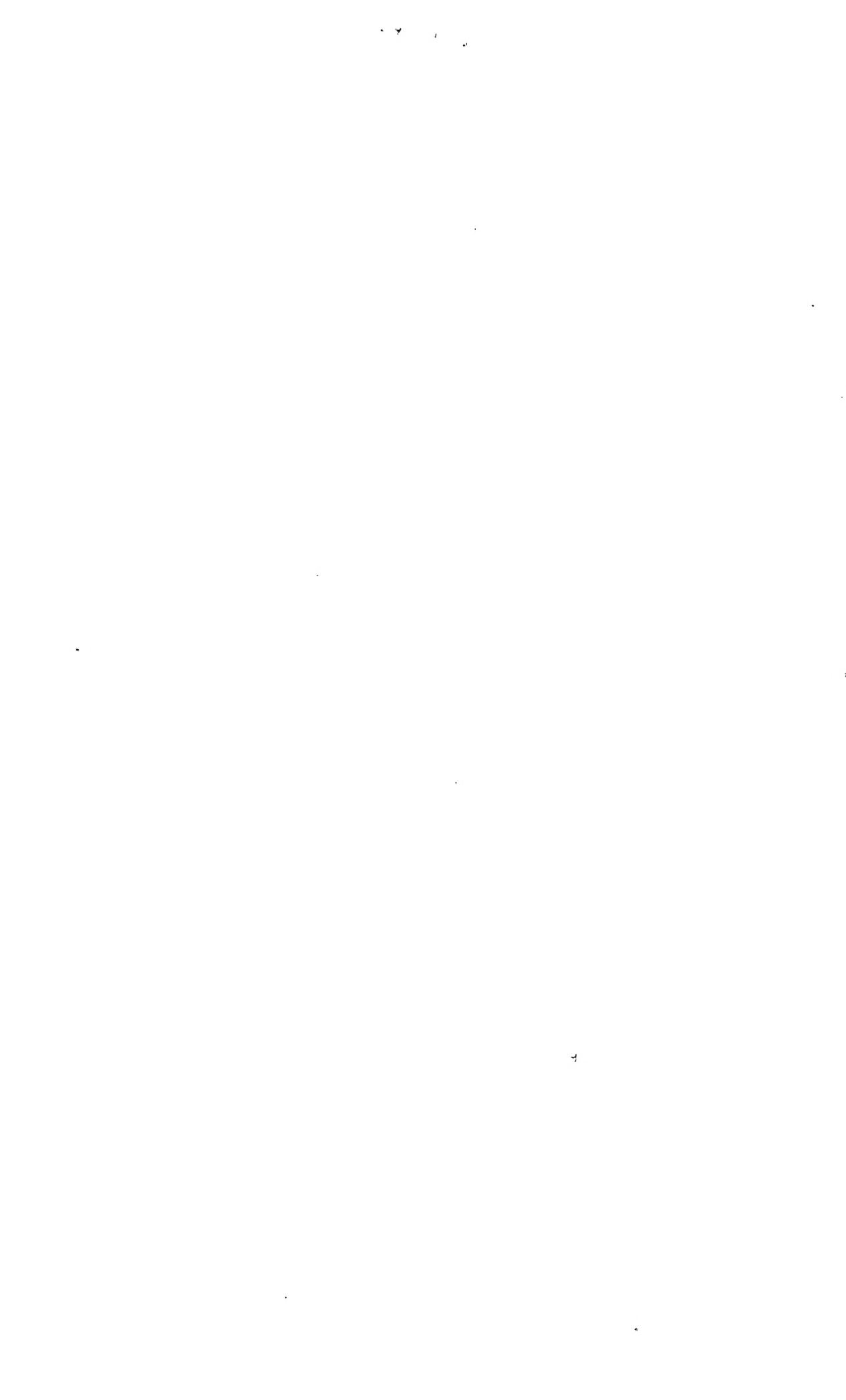
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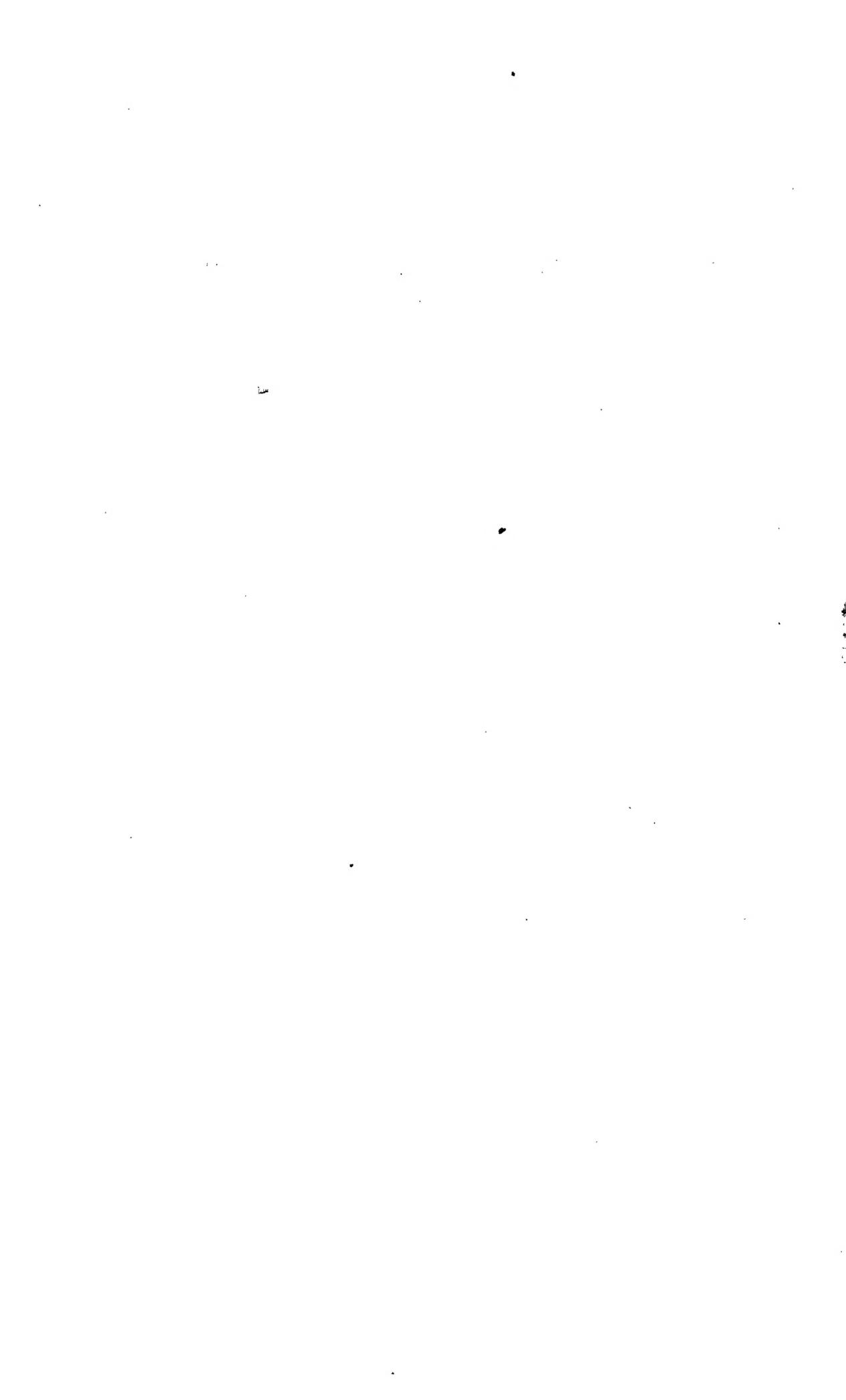
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## WHY IS BURMA SPARSELY PEOPLED?\*

There is one point in connection with the history of Burma on which it would be interesting to have some light thrown, and that is the reason why the population of the country has never, apparently, become so dense as it is in the adjoining countries. In India, China and Japan we have populations so dense that, even with constant labour and the strictest thrift, the great mass of the people are barely able to procure enough food to keep themselves alive. Roundly speaking, half the population of the globe is crowded into that corner of Asia, and millions probably go from birth to death without ever knowing what it is to have enough to eat. Yet in the tract lying between India and China and comprising the countries we now know as Burma, Siam, and French Indo-China, there is a large tract of fertile land which is under-populated. That is the state of affairs now, and, apparently, such has also been the general condition for many centuries past. It is true that Cæsar Fredericke, writing in the sixteenth century, says that "the King of Pegu hath not any army or power by sea, but, in the land, for people, dominions, gold and silver, he far exceeds the power of the Great Turk in treasure and strength." This points to a considerable population, in Pegu at least, at that time, but it is very unlikely that even then it was great enough to press hardly on the means of subsistence. Had it done so, one would have expected some comment on the poverty of the poorer classes. Cæsar Fredericke, however, must have seen a good deal of poverty in the countries he visited, so he may have taken some poverty in Pegu as a matter of course; but it was clearly its wealth that impressed him most forcibly. The absence of any power by sea is a stronger indication that the population did not even then press very hardly on the food supply. Had there been such pressure, continued for any length of time, it would surely have evolved a class of sailors and a navy of some sort, if only for river service at first. The ruins of Augkur Wat point to a fairly dense population in Cambodia at some remote time in the past. There are doubtless, other indications, Pagan, for instance, in Burma, of a fairly dense population, for a time at least, in parts of the tract of country we are considering, but there is no indication, so far as I can gather, of the pressure of the population on the means of subsistence ever having been felt throughout Burma, Siam, and French Indo-China, or of its having lasted for long if it ever did exist, in any part of the tract in question. In India, China and Japan, on the other hand, there has always been a comparatively very dense population. Something approaching the present difference in this respect seems to have prevailed for two thousand years or more. How comes it then that the tract in question has not been filled up, either by natural increase of its own people or by immigration?

No doubt, emigration in the centuries long gone by was a more difficult and dangerous undertaking than in our own times, but all the world over it went on from time to time. When population became so dense that it was difficult for the people to live at home, colonies were sent out to acquire new lands. History, even that of remote times, so far as we know it, shows that such migrations of surplus population were common enough. There is every reason to believe that the present inhabitants of Burma are the descendants of immigrants from India, from China and from Tibet, who came into the country some two thousand years ago or more. We know also that Buddhist missionaries from India came to Burma, probably before the commencement of the Christian Era, and that they penetrated as far as China. We know also that Indian Traders came to Burma from very early times. If there had been actual migrations before, and if missionaries could

\* Read at the annual meeting on the 3rd February, 1914.

go all the way to China while traders visited the coast of Burma, surely there would have been further migrations whenever the density of population in China or India made it difficult for the people to continue to live at home. No doubt the first settlers would prove a more formidable foe to any newcomers than any they had themselves encountered on their entrance to the country. This may account for the failure of further armed migrations after the first immigrants had settled down in different parts of the country. But with traders and missionaries visiting the country freely, one would have expected to see some peaceful migrations of families or groups of families whenever the pressure of population was felt severely in India or China. Such immigrants would probably have been welcomed by the Burmese kings who were always anxious to secure a large population, and who were very tolerant of foreign creeds and customs. Yet, neither from this source nor from the natural increase of the domiciled population, did the country ever really fill up permanently.

The cause certainly did not lie in the infertility of the tract in question. The greater part of it is exceedingly fertile, and is singularly free from the droughts which periodically decimated the inhabitants of large tracts in India. The dense forests would not be much of an obstruction to people who would not scruple about burning a clearing for their cultivation. Yet all this fertile tract remained for centuries as sparsely peopled as if it had been as unfertile as those regions in which only a scanty population can live. If, during all that time, China and India were so over-populated that the mass of their inhabitants were always more or less hungry, it is very singular that there were not more migrations, warlike or peaceful, into this comparatively empty tract, where the conditions were so much more favourable. If the pressure in India and China was never great enough to induce further migrations into this fertile tract lying so near, how comes it that the descendants of the earlier migrants did not increase and multiply so as to really fill the land?

One important factor in the welfare of any people is the sort of government it has evolved. With security of life and property maintained the population has a better chance of increasing than if lawlessness prevails. So far as government goes, however, it is doubtful whether the tract of country we are considering was very much worse off than India and China. Despotism prevailed everywhere, and despotism is much the same in all times and places. Occasionally the reigning despot is enlightened enough to understand that the interests of his people are identical with, or rather the very foundation of, his own. At times too he is of a kindly disposition and really anxious for the welfare of his people. But far more frequently the despot is a selfish brute, intent only on the gratification of his own ambitions and passions, and utterly careless of the sufferings of his people. Even when the despot means well his good intentions are often frustrated by his own utter ignorance of economic law, or by the selfishness and guile of his officials. There have been capable and intelligent despots who ruled well, but they have been rare exceptions everywhere; and under despotism the mass of the people have generally had no real security of life and property. The Government of China may have been a little better than those generally prevailing in India, Burma, Siam, or elsewhere. In China the Government was possibly more stable, and the study of literature may have checked to some extent pure barbarism. But even in China the government was a despotism and was often barbarous enough in its methods. In India one tyranny succeeded another and it was quite the exception for the reigning despot to take an enlightened interest in the welfare of his people. Very much the same conditions obtained in Burma and elsewhere. In China, India, Burma and Siam pure despotism prevailed; everywhere there was occasionally a more or less capable despot, but unenlightened tyranny was the general rule. It would be hard to say where things were worst on the average, but there is

no reason to suppose that Government was so much better in China and India as to account for there being dense populations there while in the intervening tract it failed to increase.

War is one of the agencies by which population is supposed to be kept down. But here again there is no reason to suppose that there was less of a check from this cause in India and China than in Burma and the adjoining countries. Indeed, so far as India at least is concerned, the population must have suffered more from war than that in Burma, for instance. Both in India and in Burma, local kings were certainly warring with each other. In that there was little to choose between the two; but India had to suffer recurring invasions from without, a scourge from which Burma was comparatively free. If war had been the main agency in keeping down the population of Burma, India must have suffered more as it had to endure ruthless invasions from without as well as wars between local rulers. Yet the population was not kept down in India as it was in Burma.

Everywhere, of course, there was the same absolute ignorance and disregard of all sanitary laws. But as this disregard tells more powerfully on densely packed populations than on scattered ones, the toll of life destroyed by this cause must have been heavier in India and China than in the sparsely populated intervening tract. Yet, in India and China the population remained dense, while in Burma and the adjoining countries it remained sparse. Nor is there any reason to suppose that the failure to increase was due to any want of fertility in the people. On the contrary, if we may take the rulers as an index, the trouble about succession to a throne in Burma often sprang from the number of sons the departed monarch had left, while in India it was frequently due to his failure to leave any heirs. The system of marriage prevailing in Burma would have been more conducive to increase, one would have thought, than the Indian system in which mere children are married, sometimes to old men, and widows are not allowed to remarry. As a matter of fact almost all Burmese women do marry, and most of them have several children. They are certainly no less affectionate towards their children than women elsewhere, and, if they are often ignorant of the laws on which the rearing of healthily children depends, they are no worse in this respect than Chinese or Indian women. Yet China and India had always dense populations comparatively to that of the intervening tracts. How great that density was we do not know exactly, of course; but it is very great in our own days and probably was nearly as great during preceding centuries. The ability of the natives of India to live on so little, and the like quality in the Chinese combined with their remarkable industry, could scarcely have been evolved without long experience of a severe struggle to maintain existence.

So far as our knowledge goes, we have every reason to believe that both China and India have always had dense populations compared to that of the intervening tract. Yet in that tract the conditions were on the whole more favourable to an increase of the population. The soil is at least equally fertile and failure of the rains is almost unknown; marriage was based on a more rational principle than in India; and there was comparative freedom from invasion from outside. Everywhere the government was a pure despotism and generally very bad; everywhere there was absolute ignorance of the laws of health; and everywhere the reigning despots were continually at war with each other. Taking all these factors together, one would have thought that the chances of increase in population were greater in Burma, Siam, and French Indo-China than in China or India. Yet the actual result was the reverse of what one would have expected.

There must be some cause for this and I shall be glad if any one can suggest a reason for it. I have not been able to think of any satisfactory explanation. The only suggestion I can make is that one of the causes may lie in the difference in the prevailing religion. In the sparsely peopled tract the prevailing religion has always been Buddhism, more or less mixed with earlier

beliefs, no doubt, but still Buddhism is the dominant belief, and the ideas of the great mass of the people are very largely influenced by Buddhist teaching. In India Buddhism, on the other hand, has long been ousted from the religious thought of the great mass of the people. In China, no doubt, Buddhism has held its ground to some extent, but it can scarcely be called the dominant belief, and the other religious teachings mixed with it are not the mere primitive religious beliefs which are mixed with it in Burma and, probably, in Siam and French Indo-China. I have a very great respect for Buddhism and admire its teaching, so mean no disparagement of it in any way in what I am about to say. Religions cannot be tested by their effect in helping on the natural increase of the population. That increase may be a good thing or a bad thing according to circumstances. The test of a religion must lie rather in the *quality* of the human life it tends to effect than in the *quantity*. Buddhism teaches a code of high morality and, in so far as its moral code is obeyed, it may be conceded at once that its effect must be to improve the quality of life affected by it. But it is possible that the quantity of human life may be affected adversely by a religion such as Buddhism, which represents life on this earth as an evil to be endured; which offers only spiritual rewards to the righteous; and which makes marriage only a civil contract between persons avowedly not aiming at the highest life.

The difference between the view taken of marriage by Hindus and Buddhists is well brought out by Miss Bode in the following passage, taken from her "Pali Literature of Burma":—"We come next to the Wagaru Dhammasattha, compiled by the King of that name reigning at Martaban in 1280. It is typical and important. Forchhammer in his learned study of the text makes a careful comparison between the Wagaru and the Hindu Manu and other ancient codes, chiefly Yajñavalkya and Narada. The comparison brings out clearly the pervading Indian element in the code; at the same time the translator finds material for some very interesting observations on the radical difference between the Buddhistic law, of which this is the first noteworthy document, and Brahmanic law, from which the Talaing code takes its form and most of its provisions. This difference is in the spirit. The Vedic sacerdotal element has vanished from the Wagaru. For instance, sacraments, (such as marriage) the efficacy of sacrifice, the possibility of expiation by penance, are all an essential part of Brahmanic law. But the Buddhist law-givers ignored the sacramental view of marriage."

To many people who claim to be in the fore front of modern thought the Buddhist law-givers will appear to have been quite right; and, so far as the efficacy of sacrifice and the possibility of expiation by penance are concerned we need not discuss the matter here. But though the Buddhist marriage law may come nearer to much modern thought on the subject than any law based on the idea of its being a sacrament, it is possible that this sacramental idea of marriage really does work towards the consecration of the home and so tends towards the preservation of the children and to the increase of the population. The idea of the State being in any way responsible for the upbringing of the children is, apart from Spartan discipline and perhaps, one or two other exceptional instances in the past, quite a modern idea even in Europe. In Asia it was practically unknown. The despots ruling throughout the countries we are considering regarded the people as an asset and utilised them extensively for fighting purposes or for building gigantic temples, if that happened to be the prevailing hobby. But not one of these despots, so far as I know, ever thought for a moment of any duty in regard to the preservation or right upbringing of the children. That was left entirely to the parents, and if they died, the children must have had a poor chance. In Buddhist countries the system of free education in the monasteries must have done much for orphan boys, and, at first sight this would seem to make for a greater preservation of the children than in non-Buddhist countries. But it is possible that the sacerdotal view of marriage in India was really a more potent influence in this direction. It em-

phasises the relationship of the father, his responsibility and his duty ; whereas with purely civil marriage, the relationship of the mother is apt to be the more dominant idea. In troublous and unsettled times especially, this difference in the point of view might, possibly, make a considerable difference in the survival of the children. In the one case, the idea of the sacredness of the family to which the children belonged through their father would be some sort of protection, not only during his life, but even in the event of his death, as his relatives would wish to see the family life carried on. No doubt, there was much of the same sort of help in Buddhist countries through natural family affection, but even the affections are the better of being reinforced by other considerations, when it comes to taking over the maintenance of a brother's family left destitute ; and the sacramental view of marriage, along with the ideas usually going with it, give precisely this reinforcement to natural affection.

The ideas which have generally gone with the sacramental view of marriage are well brought out in the case of the Jews. In Genesis we are told that Adam said on the creation of Eve :—“ This is now bone of my bone and flesh of my flesh.... Therefore shall a man leave his father and his mother, and shall cleave unto his wife ; and they shall be one flesh.” This at once puts marriage on a very different footing from a civil contract, and the Jews, I understand, have always kept more or less strictly to this exalted view of marriage. Throughout the whole of the Old Testament, it is evident that the ideas associated with marriage were the hopes of a numerous and permanent posterity. The rewards of the righteous man were not purely spiritual ones but also prosperity during his lifetime and a numerous posterity. A few instances will suffice to show how this idea of carrying on the family permeated Jewish thought. After the flood, God blessed Noah and his sons and said unto them :—“ Be fruitful and multiply and replenish the earth.” Again, when Abram was told to leave his country and kindred, the promise made to him was :—“ I will make of thee a great nation.” Later on, in the Psalms we are told that the seed of the righteous man shall be mighty on earth ; that children are an heritage of the Lord, and happy is the man that hath his quiver full of them. Christianity, of course, struck a very different note. In the New Testament the rewards offered became more purely spiritual ones, but Christians retained the Old Testament as part of their sacred scriptures, and the Christian Church very early insisted on the sacramental nature of marriage. It is the Jews, however, whom we are considering at present, and it is a very remarkable fact that they have continued to increase and multiply in spite of centuries of persecution and oppression. If the Jews in existence to-day, scattered over every quarter of the globe, could be replaced in Palestine the country could not maintain them ; and this is true, I believe, even if we take only those who have remained true to their Church and creed, in spite of centuries of exile. Besides these, of course, there are numbers who have been absorbed into the nations among whom their lot was cast and whose descendants have ceased to be reckoned among the Jews. Everything seemed to be against the increase of the Jews ; yet, they have increased, and it is possible at least, that their ideas about marriage and their strong desire for a numerous progeny have been among the factors bringing about that increase.

The Hindus have also made marriage a sort of sacrament and their religion has done something to foster the desire for a son or sons. Here too the result seems to have been a population always pressing more or less closely on the available food supply. I know very little about the ideas prevailing in China regarding marriage, but the veneration paid by a Chinaman to his ancestors must lead to a desire for sons to carry on the family line. In the country lying between India and China, and in which Buddhism became the prevailing creed, the population has failed to increase in the same way, and I suggest that this may be due, in part at least, to the purely secular view taken of marriage and to the absence of any idea of a distinctly religious end to be served by leaving male descendants. There is no need to consider mountain-

ous regions which could not support a large population, and, apart from these, the only other country where Buddhism has long been the prevailing religion is Ceylon. I know little of the details of the history of that island, but, apparently, the Buddhist inhabitants had considerable difficulty in holding their own against invading Tamils. How far was this due to the Buddhist population not increasing as rapidly as that of the Tamils did? The latter seem to have invaded Ceylon repeatedly, pressed on, probably by the difficulty the increasing number of Tamils found in maintaining existence at home. It is curious that the same cause does not seem to have caused repeated invasions of Burma from India and China, and for this, I can suggest no satisfactory reason though, no doubt, an invasion of Burma from India or China would have been a more arduous task than an invasion of Ceylon by the Tamils.

In conclusion, I repeat that no depreciation of Buddhism is meant. It is not the aim of religion to increase the quantity of human life but rather to spiritualise the thoughts of its followers. Nor do I maintain that it is always a gain to increase up to the very limit of the food supply available. But it is a very remarkable fact that the large and fertile tract of country we are considering should have remained, century after century, so sparsely peopled instead of filling up as India and China did; and I suggest that one factor in bringing this about may have been the absence of sacerdotal and sacramental ideas about marriage and of any religious motive to reinforce the natural desire to leave descendants to carry on the family line. If the same state of affairs really did prevail in Ceylon, the case for this being one factor in bringing about this result is strengthened. There may have been other factors also though I have not been able to think of any probable one. But, more especially in view of the tendency of modern thought to favour some loosening of the marriage bond and to shirk the burdens of parent-hood or at least, to restrict families, it would be interesting to know how far Buddhism has helped to bring about the scanty population in pre-eminently Buddhist countries. Dense populations have their drawbacks, of course. They intensify the struggle for existence and make life very hard for the mass of the population. But it is through such struggles that grit and character, industry and thrift are evolved; and, as France is beginning to realise, a stationary population is apt to be at a serious military dis-advantage when its neighbours are increasing and multiplying in the most approved Biblical style.

J. STUART

RĀJĀDHIRĀJA VILĀSINĪ  
OR  
“THE MANIFESTATION OF THE KING OF KINGS”  
A PALI HISTORICAL WORK EDITED AND TRANSLATED

BY  
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*Preface* :—The present text of Rājādhirāja Vilāsini is based on a palm-leaf manuscript in Burmese characters obtained from Mandalay and deposited at the Bernard Free Library, Rangoon. The text is accompanied by a commentary in Burmese, which I have consulted with great profit.

The work is an historical account of one of the greatest of Burmese kings, Bodawpaya, who reigned from 1781-1819 A. D. It would be too much to expect from a work like this any great discoveries, if any such were to be made, with regard to that king. Everything we should know has been related in the extant voluminous Burmese histories. The *Kon-boungset* history especially is a mine of information in this respect. Yet the present work is of great importance not only because it is the work of a Burmese scholar but also because it gives us, as part and parcel of the main story, a very full account of the ancient traditions of the Kings of Burma. Two instances will suffice: The ancient ceremony of anointing the king and the treatise on the white Elephant.

The author is Nānābhivamsadhammasenāpati, the learned *Sangharāja* or the Supreme Head of the Clergy, in Bodawpaya's reign. From a literary and historical point of view, the present work is his masterpiece, reflecting credit less on the achievements of the king than on the accomplishments of the author himself. Indeed, there are so many references that my chief difficulty has been to verify them. The style on the whole is very ornate and diffuse. The work speaks for itself, and does not need much by way of introduction. Hence I have thought it proper to reserve a few remarks of mine for the Appendix, only pointing out here that Mrs. Bode, in her *Pali literature of Burma*, pp. 74 et seq. has analysed the work very ably. As it is not likely that palm-leaf MSS will be possessed by many readers, I have given in foot-notes the references to those works published in Roman characters only.

PROBLEMS AND QUESTIONS

CHAPTER 10. THEORETICAL CONSIDERATIONS

1. Define the following terms:

- a)  $\Delta H^\circ_f$
- b)  $\Delta S^\circ_f$
- c)  $\Delta G^\circ_f$
- d)  $\Delta E^\circ_f$
- e)  $\Delta U^\circ_f$
- f)  $\Delta F^\circ_f$
- g)  $\Delta H^\circ_f - \Delta U^\circ_f$
- h)  $\Delta S^\circ_f - \Delta F^\circ_f$
- i)  $\Delta G^\circ_f - \Delta F^\circ_f$
- j)  $\Delta F^\circ_f - \Delta U^\circ_f$
- k)  $\Delta F^\circ_f - \Delta E^\circ_f$
- l)  $\Delta F^\circ_f - \Delta H^\circ_f$
- m)  $\Delta F^\circ_f - \Delta S^\circ_f$
- n)  $\Delta F^\circ_f - \Delta G^\circ_f$
- o)  $\Delta F^\circ_f - \Delta U^\circ_f$
- p)  $\Delta F^\circ_f - \Delta H^\circ_f$
- q)  $\Delta F^\circ_f - \Delta S^\circ_f$
- r)  $\Delta F^\circ_f - \Delta G^\circ_f$
- s)  $\Delta F^\circ_f - \Delta U^\circ_f$
- t)  $\Delta F^\circ_f - \Delta H^\circ_f$
- u)  $\Delta F^\circ_f - \Delta S^\circ_f$
- v)  $\Delta F^\circ_f - \Delta G^\circ_f$
- w)  $\Delta F^\circ_f - \Delta U^\circ_f$
- x)  $\Delta F^\circ_f - \Delta H^\circ_f$
- y)  $\Delta F^\circ_f - \Delta S^\circ_f$
- z)  $\Delta F^\circ_f - \Delta G^\circ_f$

2. Define the following terms:  
a) enthalpy  
b) entropy  
c) free energy  
d) internal energy  
e) free enthalpy  
f) free entropy  
g) standard enthalpy  
h) standard entropy  
i) standard free energy  
j) standard internal energy  
k) standard free enthalpy  
l) standard free entropy

3. Define the following terms:  
a) standard enthalpy of formation  
b) standard entropy of formation  
c) standard free energy of formation  
d) standard internal energy of formation  
e) standard free enthalpy of formation  
f) standard free entropy of formation

4. Define the following terms:  
a) standard enthalpy of combustion  
b) standard entropy of combustion  
c) standard free energy of combustion  
d) standard internal energy of combustion  
e) standard free enthalpy of combustion  
f) standard free entropy of combustion

5. Define the following terms:  
a) standard enthalpy of dissociation  
b) standard entropy of dissociation  
c) standard free energy of dissociation  
d) standard internal energy of dissociation  
e) standard free enthalpy of dissociation  
f) standard free entropy of dissociation

6. Define the following terms:  
a) standard enthalpy of ionization  
b) standard entropy of ionization  
c) standard free energy of ionization  
d) standard internal energy of ionization  
e) standard free enthalpy of ionization  
f) standard free entropy of ionization

7. Define the following terms:  
a) standard enthalpy of hydration  
b) standard entropy of hydration  
c) standard free energy of hydration  
d) standard internal energy of hydration  
e) standard free enthalpy of hydration  
f) standard free entropy of hydration

## RĀJĀDHIRĀJA VILĀSINI

Namo tassa Bhagavato Arahato Sammāsambuddhassa

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- Jayatu :—*
1. Dhammābhicakkam dharadhiggajaggo  
Dhammāvudho yo dharaṇāridhūnam  
Patto jayaṁ yojhasahaṁ name naṁ  
Me dātu-m-ukkaṁsajayaṁ tadaggo
  2. Susetachattam va tapan nisedhako  
Susetachattam va sukhaddado ca yo  
Varaññupūsaṁsavaran nam edisam  
Rah'atthu helārahasātasaṁharam
  3. Saṅgandhikeneva saphullapadminā  
Saññāya rūgādisadāturaṁ jahā  
Saddhammatejena saduttamaṁ name  
Sandātu me bhimmasapāpahāyanaṁ
  4. Rājābhirājā yo sūro jagindo jagatissaro  
Sapañño satimā dhiro supuñño sutṭhāno viro
  5. Pitakesu ca vedesu vejjasatthesu chekako  
Nipuṇo hatthisippādi 'nekavijjāsu sabbathā
  6. Cando viya 'nuggahane sūriyo viya iddhiyā  
Chamā viya kammākamme guṇehi sāgaro viya
  7. Iccādinā thomitassa assa rājābhirājino  
Abhisekānubhāvena lokasaṅgahaṇena ca
  8. Sāsanānuggahenāpi 'nekārājjiddhiyāgatā  
Visesato chabbisāṇakari ājaññalakkhaṇo
  9. Taduppatim dīpayantī ayaṁ hessati sādhukam  
Kāmañcāyaṁ tathābhūtā rājakathādīnissitā
  10. Kammasakatāsaññutam nāṇam sutamayādikam  
Bhavissati taṁ suṇataṁ pītipāmojjavaḍḍhanam
  11. Tasmā taṁ rājādhirājavilāsinin yathātatham  
Nisāmetha sammūhitā dullabhā hi ayaṁ kathā ti.

### CHAPTER I.

Tatrāyam uddeso hoti. Esa hi mahārājā asambhinnakhattiyanvayassa  
ādiccavāṁsasambhūtassa Ratanāsiñkhapurakārassa Buddhalukuramahādhamma-  
rājassa puttabhūto Mahājeyapūrakārassa mahārañño ceva Ratanāpūrakārassa

mahārañño ca bhātubhūto amarana garasañkāsa. Amarapūrārajañthānīmahānagara-kāro pubbekatapuññatāsampatticakkavarasamannāgato 1 sabbārisaṅghamaddanena vararajjam anuppatvā khattiyañbhisekena dvikkhattumpi muddhābhisissto saṅgahā-parihāniyāradhadhammādipaveniñdhammesu sadābhirato dānasilakhantiviriyādipāramidhammesu ca samāciñño anekavihitām ratñthajanashukhopāyām vicāretvā lokasaṅgahañako anekavidhañca saddhammapatiñthānopāyām vicinītvā sāsanā-nuggahañako hoti. Tassevañ bhūtassa sammāvicitopacitapubbekatapuññakam-mūpathambhakena dvikkhattum abhisīcītvā rājādhammādhiñthānakāritāsañkhātena abhisekāñubhāvena ratñthajanashukhopāyākāritāsañkhātena lokasaṅgahañena saddhammapalitñthānopāyākāritāsañkhātena sāsanānuggahañena ca anekāni hat-thagata vijitabhūtāni dipakapātñanarañthajanapadagāmanigamāni anekesañ ca rājūnañi pesitāni nānappakārāni 2 paññākārāni anekāni ca opaguyhabhāvūpagatāni nānākūlavaññavayopadesāni hatthiratanāni ti evamādikā anekā rājjiddhiyo āgatā. Visesato pana kundakumudasaradacandikāsamāñnavanññā sampuññavarasubhakkhaññā dullabhadassanādipāñcaratanatthavāti sabbaseñā jātisitakarini āgatā. Tato pi visitñthataro sabbaseñto sabbañgapaccāñgasobhañalakkhañasampanno suphullasodātasadalamāñdalapuññdarikavaratacāiñgi akāsacārikarisamāñito chabbisāñachaddantagajarājakūlo dullabhadassanādipāñcaratanatthavā ājāniyanāga-settho āgato. Acinteyyo hi kammavipāko ti. Ayam uddeso.

## CHAPTER II.

Idāni tadañthassa paññāññā-upamā-hetu-dāharañña-nigamañpasāñkhātena pañca-vākyāvayañena sañkāsana-pakñsana-vivarañña-vibhajjana-uttānikarañña-paññattisañkhātena atthapadachakkena ca samalañkaritvā bhūtañtathamavitañthañ yathāra-hām katthaci niddeso katthaci paññinideso ca bhañvissati. Ādiccakūlasambhūto suvisuddhaguññākaro mahānubhāvo rājāsi Mahāsammatañmako 3 yo cakkhubhūto lokassa guñaraññisamujjalo tamonudo virocitha dutiyo viya bhānumā, ñhapitā yena mariyādā loke lokahitesinā sapattikā sakkuñanti na tam lañghāyitum janā, yasassinām rājissaram lokasimānurakkhinām ādibhūtañ mahāvirām kathayanti Manūti yan ti hi anekagandhesu vuttaññā pañcabuddhapaññibuddhaññabhlute subhabbasubhaddakāñlasammate imasmiññeva bhaddakappe sabbesañ rājūnam ādibhūtañ pabhañkaradinakarasunumanusammatañ Mahāsammatañ nāma mahā-rājānam ādīm katvā Roja-Vararoja-Kalyāña-Varakalyāña-Uposatha-Varauposatha-Mandhātu-Mahāmandhātu-pabhuññaparivattiyā tassa puttaneñtapanetñtādiparamparāya sañkhyāpatham atikkantañ parivaññabitāya atñhamamantarakappādikkamena catusaccapaññivedhapaññibuddhāñnam catunnām sammāsambuddhāñnam veneyyabandhavadhammāmatapūpanāpāyanadhammamahussave ca samopasamite Okkākarājappabhadhamma-okkādārasākiyakūlappasute Sakyasihē Sakyamunimhi 4 ca parinibbūte tam tam rājakūlāñukūlasamuppānānam Sirikhettapūra-Arimaddanapūra-Bhinnakapūra-Vijayapūra-Jeyapūra-Ratanāpūrārājūnam anekasatānam pacchimake Mahādhammarājādipati nāma Ratanāpūraraññe ca rajjam anuggratavassato atñhārasame vasse sakalamarammamāñdalabhayasañkhobhena yathākammañ pavatte tabbhayañvāpasamakaro sattānam accantasukhanibbādako paññāpuññasarirasobhaññdisiriniketano Arimaddanapūrapatinarapati-Jeyasūramahārājāñvayabhūto asambhinnakhattiyañkūlāñukūlavāññasamudāgamena sakalalokañpabhañkaradinakarasunumanuvāññajo Buddhañkuramahādhammarājāti sabbattha patthañpaññakañtanāmo mahārājā nirankataniravasesaverabhaye sakalamarammamāñdale rājātirājabhāvām patvā Ratanāsīñkhapūrañ nāma mahānagarañ suvāññapāññadasamalañkatañ sabbañgapaccāñgasampannañ māpetvā lokassa sāsanassa ca hitam āvahanto atñhēva vassāni cakkavattirājasampattinibbisenañ devarājasampattisadisām mahārājasampattim anubhavi. Tadatikkame pana tasseva jetñthaputto Siripavaramahādhammarājā nāma Mahājeyapūrakāro caitāri-vassāni rajjam akāsi. Tasmiñ ca asati tassa majjhimabhbātā Sirisudhammadhārājājanindādhipati nāma Ratanāpūrakāro dvādasavassāni tato param ca tassa

1. samanāgato throughout.

2. nānāñ.

3. Mahāsammata, throughout, except in a few instances.

4. mī.

putto chavassāni iti Buddhañkuramahādhammarājakālato pabhūti samatīm sarājasampattivassāni henti. Evaṁ samatīm same pitumahādhammarājadirājasampattivasse samanuggate yathā vuttanayena asambhiñnakhattiyānvayajo ādicca-vāñcasambhūto esa mahādhammarājā Magghadevarājavāñsabhedaka-Kañrajanakasadisaṁ Dañhanemirājavāñsabhedaka-Āñthamakasadisañca pitumahādhammarājavāñsabhedakaṁ sāsanavañsabhedakampi sabbārisaṅgham atulapuññabalatejāñāhi vimadditvā nānāratanasampuñye Ratanāpūre nāma pūrvavare vararajjam anuppatto. Yathā Sīriddhammāsokamahādhammarājā pūre abhisekā cattāri pi vassāni anabhisitto va rajjādhiyattām kammākammaṁ sañvidahati gandhesu vuttam tathā pūre abhisekā tiṇi pi vassāni anabhisitto va rajjādhiyattām dhammādhiyaltā ca kammākammaṁ sañvidahati. Ayaṁ hi mahādhammarājā paramparābhataṁ dhirānudhirābhilakkhitām buddhabhyākaraṇasammataṁ idise kāle mandalahemūcalasāmantasantadesopadese catumahesakkhayakkhasurakkhite gīribbasammate bhūmisē ediso mahādhammarājā idisām nagaraṁ māpessati taṁ phitaṁ samiddham sāsanujotanaṁ bhavissati ti sabbattha visutām rājakolāhalavacanaṁ samanussaritvā tatheva sabbāṅgapaccaṅgasampannaṁ kelasāsikharākārapākāragopūraparikkhittām samantato dañdacatusahassapamāṇām catuvīsatidvārānudvārapaṭimāṇditaṁ sattacattālisamālaṭṭamālopasobhitām Vejayanta vimānaparimāṇatām sahatthasatamaccuggatahemapāśādasamujjalaṁ amaranagarasaiñkāsatāya sammutiamaravicāratāya 5 ca Amarapūram nāma amaravatī-amaranagaram siriyā avahasan tam iva rājaṭṭhānīmahānagaram māpesi. Yathā hi Rājagahanagaram anuppanne Buddhe cakkavattimhi vā rājaṭṭhānīmahānagaram na hoti suññām yakkhapariggahitām yakkhāvāsavānam evam idampi aññasmīm kāle rājaṭṭhānīmahānagaram na hoti suññām yakkhapariggahitām yakkhāvāsavānam, yathā ca Rājagahanagaram uppanne Buddhe cakkavattimhi vā rājaṭṭhānīmahānagaram hoti asuññām manussapariggahitām manussāvāsanagaram evam idampi imasseva kāle rājaṭṭhānīmahānagaram hoti asuññām manussapariggahitām manussāvāsanagaram, yathā ca Rājagahanagaram Vebhārave pullādiपācapabbataparikkhittām hoti Gīribbasammataṁ evam idampi Rājāvanahemūcalūdyanekapabbataparikkhittām hoti Gīribbasammataṁ, yathā pana vassasahassaccayena sabbaññubuddho loke uppajjissati ti lokapāladevatā-ugghosanena buddhakolāhalām hoti yathā ca vassasataccayena cakkavattirājā loke uppajjissati ti lokapāladevatābyūkaraṇena cakkavattikolāhalām hoti tathā idise kāle ediso mahiddhiko mahānubhāvo dhavalagajappati mahādhammarājā loke uppajjissati so idisām nagaraṁ māpessati taṁ phitaṁ samiddham sāsanujotanaṁ bhavissati ti lokapāladevatāpabodhanena rājakolāhalām hoti evam paramparābhataṁ dhirānudhirābhilakkhitām buddhabhyūkaraṇasammataṁ sabbattha visutām rājakolāhalavacanaṁ samanussaritvā sumāpīte amarapūrarājaṭṭhānīmahānagare na cīrasseva sabbatā parinītthite dhammaketu dhammadhajo dhammaninno dhammapojo dhammapabbhāro esa mahādhammarājā dhammena samena rājaṁ kāretukāmo dhammarājabhāvamūlakāraṇām paccavekkhanto ādikappamhi pabhañkaradinakarasunumanusammata-Mahāsammataṁ mahārājato pabhūti Roja-Vararoja-Kalyāṇa-Varakalyāṇādikamāgatadharmmikarājūnam paramparābhisekapaveñibhūtamabhisēkatantiṁ Narapatijayacariyādiniyamitaṁ sīsanahādi-abhisekaparikammaṁ Jātakādigandhāgatām pañcarājakudhabhañḍādi-abhisekasambhāram tatheva udumparasākhamāṅgalamañḍapādi-abhisekaṭṭhānam sīhāsanacakkādiparimitam abhisekakālam tatthatat-thāgatām sañkhattayānukūlakūllatayasañkhātam abhisecanakām yathāgandham yathācīṇām sādhukām kathitāya pariþuñnavācāya abhisiñcanabhbūtam abhisekavidhim ekaṁsikarājasamaññānekārājiddhisamannāgatam abhisekānisaṁsaṁ anekāñsikarājasamaññānekārājiddhilābhām anabhisekadosañca iti navavidham pi atthām vividham samanupassitvā sabbena sabbām sampāditena abhisekasambhārena tihī pi abhisecanakehi yathāpaveniyā poriyā vācāya dakkhiñāvātṭasaiñkhattayena abhisiñcāpetvā sakalanikhilabhūpālamanḍalābhisekavisesena amatāgaradarasadhārāparamparābhisiñcanasadisena paramavarakhatiyābhisekena muddhābhisisitto. Rājadhammādhiṭṭhānam eva hi abhiseittā nāma. Tasmā yathāgand-

haṁ yathācīṇaṁ abhisittassa abhisekānubhāvena pubbekatapuññakammasa-hakārikāraṇapayogabhütena anekārājiddhiyo āgatā yathā tam Siridhammāsoka-mahārājassa viya Devānampiyatissamahārājassa viya ca. Pubbekatapuññakam-mānubhāvena āgatā pi hi rājiddhiyo payogasampattibhūtā abhisekānubhāvena āgatā ti vuccanti. Arahattamagena āgatā patisambhīdādayo avasesaguṇavisesā viyā ti Sāratthadipanī ādisu vuttaṁ. Abhisittasseva ca rājanāmalābho. Tathā hi Mahāsutasomajātake muddhābhiseittā katanāmadheyyā ti gāthāpadassa athavacane muddhani abhisittatā katanāmadheyyā ti hetuphalabhāvena vuttaṁ ; muddhābhiseittabhāvo hi hetu rājanāmalābho phalaṁ. Anabhisittassa pana rājiddhi-anāgamanam arājanāmalābho ca hoti. Tena vuttaṁ Saddanitiyaṁ anabhisitte arājini mahārājati vohāro na pavattati ti ato ca Vijayarājassa anantare Upatissāmacca na anabhisittena ekavassamā rājabhāve kate pi arājakam ekavassamā ti ca Abhayarājassa anantare Pañḍukābhayassa anabhisittassa sattarasarajjakata-vassāni rājasuññāni ti ca Mahāvāṁsādīsu vuttaṁ. Kimaṅgam pana aññesaṁ vacanam ? Bhagavatā yeva sabbaññunā anabhisittassa ekaṁsato rājanāmābhāvo anāpatti na khattiyyābhisekena abhisitto hoti ti Rājasikkhāpade vutto. Evaṁ abhisekassa mahānisaṁsataṁ anabhisekassa ca mahāparādhataṁ apassantā abhiseca-nāma sapathasadisan ti ca ayoniso manasikarontā adhammikarājāno tivaṅgasampannamabhisekam kātuṁ na ussahanti. Tivaṅgan ti ca yathā vidhānavihi-tabhāvo ekamaṅgam khattiyyābhāvāhām khattiyyābhisecanam ekamaṅgam muddhani yeva abhiseko ekamaṅgam vuttaṁ hi Sumanagalavilāsinī Sāratthapakā-sāni ādisu yathāvihitena khattiyyābhisekena muddhani avasitto ti tivaṅgasampan-nābhisekadassanam evetām daṭṭhabbam. Ayam pana mahādhammarājā yathā-vuttaṁ nav avidham pi athām hatthatale āmalakam iva vividham samanupassitvā Sumedhāya deviyā saddhim Surucirājū Udayabhaddāya deviyā saddhim Udayarājā ca abhisitto ti Jātakesu vuttam upadesam anuggantvā accharānibbisesasarirasobhaggadisirisamānāgatāya nirantaraniyatānikhilaniccalanimmalasaddhāsiladya-laṅkārasamalaṅkātāya sahāpuññakāriniyā Siripavaramahārājindāmaṅgalāratana-nādeviyā nāma aggamaheziyā saddhim dvikkhattum pi yathāgandham yathā-cīṇam tivaṅgasampannam abhisekam akāsi abhisekāvasāne ca parisamajhe yeva sapuññakammadattiyena Siripavaravijayānantayasatribhavanādīdhipati-pañditamahādhammarājādhīrājā samaññālaṅcanena gambhiramadhūrasāravara-māngalatthalaṅcakena sabbattha byāpakopākaṭo ca holī ti ayam abhisekakathā.

### CHAPTER III.

Evatām mahādhammarājā sakalanikhilabhūpālamanḍalābhisekavisesam amatāgadarasadhārāparamparābhiseññicasadisam adhunā anaññasādhāraṇam satisayaṁ mahādhammarājabhāvamūlabhūtam paramavarakhattiyyābhisekamud-dhābhisekam patvā lokahitam sāsanahitañca dīghadassi dīghamapekkhamāno rañño cakkavattissa parināyakaratanaṁ viya athadhammamattakālaparisāññutādipañcaṅgasamannāgatam sūraviradhīrapaññāpuññadhaññavantam Sirimahād-hammābhijeyasihasūram nāma parināyakam ubhatosujātāya saha piyadhitāya uparajjābhisekena asambhinnakhattiyañdicca vāṁsarājavāṁsaṁ niccalam thīram patiṭṭhāpetvā ubhatosujātasurūpapiyamanāpapañdiccadipañcaṅgasampannam paññāpuññasarirasobhaggadisiriniketanam Mahājeyapūrapatipiyanettam 6 ubhatosujātāya saddhim piyanettāya rājanākurattaniyādanena asambhinnakhattiya-ñdicca vāṁsarājavāṁsaṁ ativa niccalam thīratarām saṅghātētvā dhammena sameṇa rajjām karonto anekavihitam rāṭṭhajanāsukhopāyam vicāretvā lokasaṅgahañako anekavidhañca saddhammapatiṭṭhānopāyam vicinītvā sāsanuggahañako hoti. Kathām lokasaṅgahañe tāva ? " Yasmim bhikkhave samaye rājāno adhammikā honti rājayuttāpi tasmiṁ samaye adhammikā honti " ti ādinā Aṅguttarāgamacare Bhagavatā vuttaṁ adhammikatādosam dhammikatānisamānañca manasi sannidhāya " yo ca rājā adhammattho rāṭṭhaviddhamasavo mugō tāpayitvā janapadaṁ tāpanne pecca 7 paccatū " ti ādinā Saṅkiccajātake sabbadassinā dassitam adhamm-

vatāparādhām dhammikatāphalañca manasikaritvā dānam sīlam pariccāgam ajakām maddavām tapām akodhām avihīnsañca khanti ca avirodhanan ti Mahāham sajatakādīsu dhammarājena ajjbhāte dasavidhe pi rājadhamme pūsāuccchattam viya garumkaronto satatañ samitam samāciñño hoti. Tathā "mā vijite adhammakāro pavattiitthā" ti Cakkavattisutte Tathāgatena vuttam khattiyavattam samādiyitvā ratthajane pāññātipātādi akusalakammato nivāreti dānasilādikusalakamme ca niyojeti. Rathacakkrena hi vaccham 8 abhikkamentam ekam vasamānam piyataram attano orasaputtam pi ekena vacchena samam katvā hanato Elūrarañño pavattim sallakkhetvā ekakukkuṭamattam pi aghātentō pāññātipātato ativa dalham nisedheti. "Sadāciññakam akusalakammam ditthadhamme pi anīthap-haladāyakan" ti kammaphalam vicāretvā nighaṇḍunayānanurūpatūlakuṭamānakutakahāpañakutādivivajjanena adinnādānato "Paradāragamanam nāma anītha-9 hetu bhave bhave pi attabhāvaparivattanakamman" ti tatthatatthāgatam īdina-vām īatvā kāmesu micchācārato "Musāvādo nāma mahāparādho sakalam pi rattham nirojam karoti paṭhaviyā hi ojā musāvādena kammakaraṇatthānato sattaranatanamattam heṭṭhā bhassati ; tato āhāre vā telamadhuphāññātādisu vā osadhesu 10 ojā na hoti ; nirojāhārabhojanā manussā bahvābādhā honī" ti Tesakujā-jātakādīsu lokanāthena vuttam mrsāvādodosam passitvā musāvādato sandīthā-kadhanajānū-ādayo dose paccavekkhitvā sūrāmerayamajjapānato jutānuyogato ca ativa dañham nisedheti. Umaṅgajātakādīsu āgatañ porāṇakadhammikarājūnam āciññam samanuggantvā māse māse pi dhammasaṅgāhakehi ṭhapitesu sukkapak-khapañcamī-uposathadine māghāṭabherim carāpetvā dānasilādikusalakammesu apamādam janeti. "Uposathiko va Nimimahārājādassanam labhati nānuposathiko" ti Magghadevasutte vuttam Nimimahārājapaveneñ tussitvā rājāmacca-porise pi satācāram samādapeti. "Porāṇakadhammikarājakāle kira sassamedham pūrisamedham sammāpāsam vācāpeyyan ti cattāri saṅgahavatthuni ahesum yehi rājāno lokam saṅgāñhiñsu ayañ porāṇākā paveñi" ti Manorathapūrañ ādīsu agatañ porāṇakadhammikarājamaggam sammāgantvā catūhi sassamedhādisaṅga-havatthuhi dānapīyavācādisaṅgahavatthuhi ca ratthajane saṅgāñhāti evamādinā abbhutam acchariyam satatañ samitam lokasaṅgahañako hoti. Ayam lokasaṅga-hānakathā.

8. veccham.

9. anattha.

10. osathesu.

(to be continued)



## THE MANIFESTATION OF THE KING OF KINGS

*Honour be to Him, the Blessed, the Saint, the Fully Enlightened.*

*May there be victory :—1.* The Buddha, who holds (1) the noble wheel o the Law, rides the elephant of intellect and makes a weapon of the Law, has attained to victory, having shaken off the enemies of existence (sc. the kilesas). Him bold in batte I honour. May He thus exalted in honour (2) grant me unstinted victory.

2... The Law, which like the graceful white umbrella (3) subsides anxious thoughts, and like the graceful white umbrella bestows happiness and is excellent in being praised by Him who knows the best (the Buddha) I honour. May this trio of dalliance, secrecy and pleasure be put away from me.

3. By the power of the good Law and by perfect knowledge, the perennial diseases of lust and so forth have been abandoned by the Clergy, just as though they have been removed by the sweet fragrance of a full blown lotus. That Clergy of eternal goodness (4) I honour. May they help me to forsake all fear together with evil (5.)

4, 5. The King of kings was a hero, lord of men, master of the world, wise, mindful, steadfast, possessing great merit, very active and mighty ; well versed in the Scriptures, the Vedas and treatises on medicine and thoroughly skilled in managing elephants and in various other arts and sciences.

6. In patronizing the people he was like the moon, in majesty he was like the sun, in work great and small he was like the earth, in merit he was like the ocean.(7)

7, 8. Thus by the power of the coronation of this King of kings, so honoured and by virtue of his favour shown to the world and of his maintenance of the religion, he was replete with the various requisites of kingly power. The white elephant (8) of pure breed arrived for his use.

9—11. This treatise will explain carefully all the circumstances. Because it verily is compiled from royal mandates and other sources and will produce in listeners increase of joy and gladness and give them that knowledge, which, besides other things, is connected with the condition of having karma as one's portion, (9) and which is acquired through verbal intercourse with the wise, (10) therefore listen attentively to this treatise, the Manifestation of the King of kings, a faithful record. Such a true record it is difficult to get.

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(1) *dhara=dharo.*

(2) *tad-aggo.*

(3) Burmese emblem of royalty.

(4) *Sad-uttamam=Sada-uttamam.* It may also be taken to mean *Sat-uttamam*, "best among the good."

(5) *Bhimma-sa-papa-hayanam.*

(6) *Sa-utthana.*

(7) In this simile, the moon is the emblem of kindness, the sun of power, the earth of patience, and the ocean of extensiveness.

(8) *Chabbisāna*, 'having six-rayed tusks' =*chaddanta*, the name by which the white elephant is known to the Burmese.

(9) *Kammasakata.*

(10) *Suta-maya.*

## CHAPTER I.

## SYNOPSIS OF THE STORY.

*Here is the account in brief :—*This king was descended from an unbroken line of kings of the Solar race and was the son of King Buddhañkura, (11) who built the city of Ratanāsīnkhā (12). He was also brother [10] to the king (13) who built Mahājeyapūra (14) and to the king (15) who built Ratanapūra (15); and he himself built the royal city of Amarapūra, similar to the city of the gods. He was endowed with the excellent wheel of the attainment of meritorious deeds done in former existences. Having crushed all the host of his enemies, he attained to the noblest royalty and was twice anointed king. He took a constant delight in the observance of hereditary precepts, such as patronizing the people, (17) the conditions of non-decay, (18) the kingly duties (19) and so forth. He was well practised in the Perfections, (20) such as alms-giving, precept, patience, exertion, etc. He showed favour to the world by finding out the various means of making the country people happy, and he showed favour to the religion by choosing the various means of establishing the good Law. Thus he was inaugurated twice on the strength of his meritorious deeds rightly heaped up in former existences. By virtues of his inauguration in having duly performed the kingly duties, by virtue of his favour towards the world in promoting the happiness of the country people, and by virtue of his favour towards the religion in establishing the good Law, all manner of islands, ports, kingdoms, districts, villages and towns become his own by conquest ; presents of all sorts were sent by various kings ; and many noble elephants of various breeds, colours and ages were distinguished by being made state elephants (21). Thus was he replete with the various kingly powers. And especially there arrived to him the white she-elephant born full-white, replete with the five attributes of a jewel in the difficulty of possessing it, of getting a sight of it, etc., endowed with excellent beautiful characteristics and as lovely as the jasmine flower, the lily or the autumnal moon light. More excellent still than that was the noble full-white elephant, which also arrived, which was of pure breed, endowed with the five attributes of a jewel in the difficulty of possessing it, of getting a sight of it etc., descended from a race of royal elephants having six-rayed tusks, a representative (22) of the sky-traversing elephants, covered with an excellent skin beautiful as the lotus full-blown and with a white pericarp in the middle, and replete with the characteristics of beauty, both great and small. The result of karma is indeed beyond imagination. Here ends the story in brief (uddesa).

## CHAPTER II.

## INAUGURATION.

Now the Uddesa (the short story) will be expanded sometimes by the Niddesa (of medium length), sometimes by the Patiniddesa (in detail) in a fitting manner, in accordance with truth and free from falsehood by making use of the six ornaments of interpreting a passage, (viz, condensation, preliminary remarks, exposition, differentiation, commentary and regulation) and of the five parts of speech, (viz, concord, simile, causation, example, deduction).

(11) Alaungpaya (A. D. 1753-1760).

(12) Shwebo.

(13) Naung-daw-gyi (A. D. 1760-1763).

(14) Sagaing.

(15) Sinbyushin (1763-1776).

(16) Ava.

(17) The four Sangha's, viz., alms-giving, sweetness of speech, beneficent rule and impartiality.

(18) *viz* : 1. To hold frequent meetings with the ministers. 2. Not to transgress ancient rules and regulations. 3. To honour the aged. 4. Not to sin against the daughters of the people. 5. To make offerings to shrines both inside and outside the town. 6. To preserve shrines. 7. To succour the Clergy.

(19) See below p. 21

(20) See J. B. R. S. vol. II, pt. II, p. 179 note (3).

(21) *opaguyhabhava*.

(22) ' Samanito, one who brings or is comparable to.'

There was a king named Mahāsammata, a powerful king, the abode of the purest virtues, of the Solar race, the eye of the world, radiating rays of virtue and dispelling darkness like a second sun. Being anxious for the benefit of the world, he laid down rules of conduct for all and no opponent dared transgress them. They say that this famous king of kings, the great hero, who was director of the world's regulations and who existed from the first was Manu. Thus as related in various books in this auspicious kappa which is to witness the birth of five Buddhas, (23) starting from the beginning of all kings, the great king Mahāsammata, otherwise called Manu, offspring of the light-giving sun, we come to the whole line of his sons, grandsons and descendants, Roja, Vararoja, Kalyāṇa, Varakalyāṇa, Uposatha, Varauposatha, Mandhātu, Mahāmandhātu and so forth, whose number passed the bounds of calculation. When the great religious festival of giving the drink of the gods to their relations, mankind, had been duly celebrated by the four fully enlightened Buddhas (24), who discovered the four Truths (25) in the course of an immense period of time expressed by the eighth *antarakkappa* (26), and when the parinibbāna (death) of the Sākiyan Saint, the lion of the Sākiyans, of the dynasty of the Sākiyans, torch-bearer of the Truth and offspring of King Okkāka had taken place, and when Mahādhammarājādhipati of Ratanāpūra had duly reigned for eighteen years as the last of the kings, who built according to their dynasties many hundreds of towns, such as, Sirikhettapūra, (27) Arimaddanapūra, (28) Bhinnakapūra, (29) Vijayapūra, (30) Jeyapūra (31) and Ratanāpūra (32) at a time when the whole of Burma was in a fearfully disturbed state, a peace-maker appeared very opportunely in the person of Buddhañkura Mahādhammarājā, who was directly connected, through an unbroken line of kings, with Manu of the dynasty of the Sun the giver of light to the whole world, who was descended from Narapatijeyasūra (1174-1211 A.D.) of Arimaddana, who was the glorious home of wisdom, merit, beauty of form and other qualities and who brought exceedingly great happiness to the people. Celebrated in every place, this great king ruled as the king of kings in the whole of Burma, having fully stamped out her fears. He created the great city of Ratanāsīkha, adorned with golden palaces and complete in all its parts. Doing good for the world and the religion he enjoyed for eight years kingly glory like the glory of the king of gods and in no way different from the glory of a universal monarch. After him reigned for four years his eldest son, named Siripavaramahādhammarāja (33) builder of Mahājeyapūra. When he passed away, his middle brother, Sirisudhammadamahārājā (34) lord of men and builder of Ratanāpūra reigned for twelve years. After him, his son (35) reigned for six years. [11] Thus there were thirty years of kingly rule commencing from Buddhañkurañmāhādhammarāja. Thus when his predecessors as said above had reigned justly for thirty years, this king, (36) who was of the Solar race and descended from an unbroken line of kings, by his unparalleled authority, might, power and merit, crushed all the host of his enemies, who were destroyers of the

(23) The present kappa is called *bhudda*, because five Buddhas must appear. Kakusandha, Konagamana, Kassapa and Gotama have appeared. The fifth will be Metteyya.

(24) See note (23).

(25) The Four Noble Truths, Childers's Dictionary, S. V. Ariyasaccam.

(26) An immense period of time during which man's age increases from ten years to an incalculable number and then decreases again to ten years. It is divided into eight yugas.

(27) Prome, founded by Dwattabaung in 443 B.C.

(28) Pagan, built by Pyinpya-min in 849 A.D.

(29) Myinsaing, built by Asankhaya-mia in 1300 A. D.

(30) Pinya, built by Thihathu in 1312 A. D.

(31) Sagaing, built by Saw-yun in 1315 A. D. This was before Alaungpaya's time. Later, Sagaing was built by Naung-daw-gyi, see notes (13), (14).

(32) Ava, founded before Alaungpaya's time by Thado-minbya in 1364 A. D., later by Sinbyushin, see notes (15), (16).

(33) See note (13).

(34) See note (15).

(35) Singu Min (1775-1781 A. D.)

(36) i.e., Bodawpaya, the hero of the present book. He reigned from 1781 to 1819.

lineage of the religion and of the line of their ancestral kings, and who were like Atthamaka, destroyer of the Dalhanemi dynasty and Kalārajanaka, destroyer of the Magghadeva dynasty (37). In the excellent town of Ratanāpūra, replete with various gems, he attained to the highest kingship. As related in books King Sīridhammāsoka (38) the righteous before his inauguration attended for four years to the duties great and small of the kingdom. So also this king before his inauguration attended for three years to the duties great and small of the kingdom and of the Truth. There was a tradition handed down by the wise as the prophecy of the Buddha to this effect, "At such a time such a king of Truth will build such a city, a prosperous and successful town where the religion will flourish, on a high plot of ground designated the Giribbaja (Mountain Fence), well guarded by four powerful yakkhas, (39) noted for its evenness and close by the Golden Mount of Mandalay." The king remembering well this wide-spread prophecy built his royal city, which derided in splendour the Amaravatī of the gods, and was named Amarapūra from its having been superintended by the Sammuti gods and from its likeness to the city of the gods, ablaze with golden palaces as high as the Vejanta (40) palace being one hundred and thirty cubits in height, graceful with forty-seven turrets and gate-towers, adorned with twenty-four gates big and small, having a total circumference of four thousand *danda*'s (41) surrounded by watch-towers and walls having the appearance of Mount Kelasa (42) and replete with all its parts. As Rājagaha (43) in the absence of the Buddha or of a universal monarch was not considered the royal city but was a deserted place, a forest abode haunted by ogres, so this city in other times was not the royal city but was a deserted place, a forest adode haunted by ogres. But as Rājagaha, when the Buddha or a universal monarch appeared, became the royal city, a populous city inhabited by men, so at this time did this city become the royal city, a populous city inhabited by men. As Rājagaha being surrounded by five hills, Vebhāra, Vepulla and so on was called Giribbaja, so also this city being surrounded by Rājavana, Hemācala and various other hills (44) was called Giribbaja. As by the proclamation of the guardian gods of the world an uproar concerning the Buddha goes about to the effect that after the lapse of a thousand years the omniscient Buddha will appear in the world and by the declaration of the guardian gods of the world an uproar concerning the universal monarch goes about to the effect that after the lapse of a hundred years the universal monarch will appear in the world, so by the instruction of the guardian gods of the world an uproar concerning the king went about to the effect that at such a time such a righteous king, of great power and glory, lord of white elephants would appear in the world and that he would build such a city, a prosperous and successful town where the religion would flourish. When not long after the well-built royal city of Amarapūra was completely finished in every respect, the king, who had the Law for flag, the Law for banner and who was inclined towards the Law, and who is like a slope up the side of the mountain of the Law, well remembering the wide-spread prophecy, handed down by the wise as the declaration of the Buddha and desiring to govern righteously and equitably, considered the essentials of righteous Government. The exact traditional ceremony of inauguration, observed by righteous kings, beginning from the creation of the world with Mahāsammata the descendant of the light giving sun, otherwise called

(37) See Cakkavatti-Sīhanāda-Suttanta of Digha-Nikaya, Vol. III, Pali Text Society Edition ; and also Makhādevasutta of Majjhima Nikāya, Vol. II, pt. I, Pali Text Society Edition.

(38) The famous Asoka the Buddhist king, who sent missionaries to different parts of the world. He lived in the 3rd century B C.

(39) *Viz.*, the yakkhas residing in the four mountains round Amarapura. The names are Mount Thaman, Mount Kyin, Mount Pyon and Mount Myin. *Hmannan yazawin* Vol. I, p. 556.

(40) palace of Sakka, king of Gods.

(41) A measure of length equal to four hands. Burmese *ta*.

(42) in the Himalayas.

(43) Capital of Magadha.

(44) See note (39). The names of the three remaining hills surrounding Rājagaha are Pandava, Isigili and Gijjhakuta.

Manu and coming down in order to Raja, Vararoja, Kalyāṇa, Varakalyāṇa and other kings,—the exact process of the inaugural head-bathing and other rites as laid down in Narapatijayacariya (45) and other books,—the five symbols of royalty, as the requisites of inauguration as given Jātaka and other books,— (46) in like manner the auspicious fig pavilion as the fitting place for inauguration,—the throne, the wheel and so on as measures of the time for inauguration,—the person to be inaugurated belonging to the three families worthy of the three conches as given in various books,—(47) the inaugural rites themselves replete with words auspiciously recited with due ceremony according to custom and as laid down in books,—(48) the advantages of inauguration in obtaining the title of True King with all manner of kingly powers,—and the disadvantages of non-inauguration in not obtaining the title of True King with all manner of kingly powers,—this ninefold meaning of inauguration he understood clearly. He had himself inaugurated, as befitting a worthy prince, by three worthy persons, with due ceremony, according to full traditional rites and with a sufficiency of verbal formalities, the consecrated oil being poured out of three conches going round in the right direction and falling like a continuous healing shower of ambrosial juice thus altogether surpassing the inauguration of all other kings of the earth. Resolution in kingly duties constitutes inauguration.

[12] Therefore by the power of his inauguration and the productive motive of his former actions, the king, who was inaugurated in accordance with the scriptures and tradition acquired all manner of kingly powers, just as such powers were acquired by Siridhammāsoka and Devānampiya Tissa (49). And because these kingly powers, acquired by virtue of one's former meritorious deeds, were the result of some thing, they may be said to have been acquired by virtue of his inauguration. It is mentioned in such books as Sāratthadīpanī that they are like the Patisambhida's (50) and all other distinguished qualities, which are acquired by virtue of the Path of Saintship. The title of king is rightly acquired only after inauguration. Thus in Mahāsutasomajātaka the verse, *muddhābhisitta katana-madheyyā* (51) means that the title is rightly acquired when the king's head has been anointed. This is said with reference to cause and effect,—anointing the head being the cause and acquiring the title being the effect. One who is not inaugurated does not acquire the kingly powers nor the title of King. So it is said in Saddanīti, "When one is not inaugurated one does not go by the title of Mahārāja." Hence in Mahāvamsa and other books the one-year rule of the un-anointed minister Upatissa in immediate succession to King Vijaya (52) is called an interregnum as also the seventeen-year rule of the un-anointed Pañḍukabhaya in immediate succession to King Abhaya (53). What need is there to quote other authors? Even in Rājasikkhapada (54) the unattainment of the Title of King by one who is not duly anointed has been definitely said by the Blessed One, the Omniscient. Inauguration is abused if one is unmindful of the advantages of inauguration and of the great evils of non-inauguration. And unrighteous kings being unwise dare not take upon themselves this three-fold ceremony, which consists of, *first*, observation of ancient custom, *secondly*, consecration of the

(45) I do not yet know of the existence of this work. Probably the MS. is lying undetected in some monastery.

(46) e.g., see Samkicca Jātaka, No. 530 of Fausboll's Edition, page 136 of Vol. V, translation.

(47) e.g. see Vaddhakisūkara Jātaka, No. 283 and page 278 of Vol. II, translation.

(48) e.g. see Taccha-Sūkara Jātaka, No. 492 and page 220 of Vol. IV, translation.

(49) A king of Ceylon see Mahāvamsa (Pali Text Society's Edition) Ch. XI, which also gives details of the consecrating ceremonial of a king.

(50) Analytical knowledge, which consists of 4 parts : 1. Attha 2. Dhamma 3. Nirutti.

4. Patibhāna, see further Childer's Dictionary S. V. Patisambhida.

(51) No. 537. page 496, Vol. V, of Fausboll's edition.

(52) Mahāvamsa, VIII 5.

(53) Mahāvamsa X, 105.

(54) "Obviously a well-known manual of the duties of kings," Mrs. Bode, *Pali Literature of Burma*, page 79, note 1.

prince in testimony to his kingship, and *thirdly*, consecration of the head. Thus these three parts, namely, ancient custom, princely consecration and consecration of the head are mentioned in such books as Sumaigala Vilāsinī and Sāratthapakūsanī. Thus it should be understood This king of righteousness, understanding as mentioned above the nine-fold meaning of inauguration just as well as he might know a myrobalan on his palm, twice celebrated this three-fold consecration according to the Scriptures and ancient custom with his Chief Queen Siripavaramahārājindāmaūgalāratanādēvi, who was endowed with a glory and beauty of form and other qualities in no way different from those of a celestial nymph ; who was adorned with the decorations of faith, morality and other qualities, untainted, unshakeable, complete, firm and solid ; his co-worker in merit—following the example furnished in the Jātaka's by King Udaya with Queen Udayabhaddā (55) and King Suruci with Queen Sumedhā (56). And at the conclusion of the coronation ceremony even in the midst of the assembly he was known everywhere by the Title of Siripavaravijayānantayasatribhavanādityādhīpatipāññitamahādhammarājādhirājā, acquired by virtue of his meritorious deeds and conveying a most profound, sweet and essentially auspicious meaning. This is the account of his inauguration.

### CHAPTER III.

#### PATRONAGE OF THE WORLD.

Thus this king of righteousness went through the noble excellent ceremony of inauguration, the basis of kingship, in a manner surpassing any inauguration celebrated at the present time, the consecration ceremony being comparable to a continuous healing shower of ambrosial juice and different from that of any other king. The long-sighted king foreseeing the benefit that would be bestowed on the world and on the religion conferred the Crown Princeship on his eldest son, Sirimahādhammābhijeyasihasūra, (57) a daring, heroic prince, brave, wise, virtuous and powerful, endowed with the five qualities of a universal monarch's eldest prince—to know what is beneficial, the nature of a thing, the measure of a thing, the proper time for any thing and any assembly that may be gathered ; and made the unbroken dynasty of the Solar Kings strong and unshakeable by giving the prince in marriage to his beloved daughter of pure descent on both sides ; and again joined this unbroken dynasty of the Solar Kings in a more strong and unshakeable tie by making nascent sovereigns (in wedlock) of his beloved grand-daughter, of pure descent on both sides and his beloved grandson, Mahājeyapūrapati (58)' who was the home of wisdom, merit, beauty *et caetera* and replete with the five qualities of pure descent on both sides, beauty of form, loveliness, amiableness and wisdom. Ruling the kingdom in righteousness and in equity and considering the various ways of making the people happy, he showed favour to the world. Choosing the various means of establishing the Good Law, he showed favour to the religion. First, how did he show favour to the world ? " Whenever, O Monks, kings are unrighteous, those who are connected with the kings also become unrighteous," Thus by this and similar passages spoken by the Blessed one in the noble Aṅguttara Nikāya, (59) he was fully convinced of the evils of unrighteousness and the merits of righteousness. And he also remembered these evils and merits as

(55) See Jātaka No. 458, Vol. IV, p. 104.

(56) See Jātaka No. 489, Vol. IV, p. 315.

(57) This prince died without becoming king.

(58) Known as the Sagaing-Min, who succeeded his grand-father under the name of Bagyidaw (1819-1837).

(59) Vol. II, p. 74 of P. T. S. edition, where instead of *rajaputtāpi* our author reads *rājayuttāpi*. The reference should be made to the paccuppannavatthu of Tesakunājātaka (No. 521) where the word is *rājayuttāpi*,

shown by the all-seeing Buddha in Saṅkiccajātaka, (69) "An unrighteous king destroys his own kingdom and is silly ; and because he is a scourge to his country, he hereafter must suffer in Tāpanna hell" and so forth. [13] Continuously and intermittently he practised unto perfection the ten kingly duties, which he honoured like his marble umbrella and which he compiled from such Jātaka stories as the Mahāhaṁsa, (61) viz.: alms-giving, precept, self-sacrifice, equity, gentleness, religious austerity, absence of anger, harmlessness, patience, agreeableness. He practised the kingly duties given by the Tathāgata in Cakkavattisutta, (62) which says "Let there be no evil deed done in the country." Accordingly, he forbade the people to do such unmeritorious acts as life-taking *et caetera*, and enjoined on them the observance of such meritorious acts as alms-giving, precept and so forth. Indeed, he so strongly prohibited life-taking that he would not allow even a chicken to be killed, laying to heart the lesson furnished by King Elāra, who placing his only beloved son on the same footing as a calf, executed him for having crushed to death a calf under the rolling wheels of his chariot (63). He strongly restrained the people from theft and such fraudulent acts as the use of false weights, false measures, false coins *et caetera*, which are in direct opposition to Nighandu, remembering the effect of karma, which says that an evil act done habitually brings forth evil fruit even in one's life-time. Likewise he strongly checked them from unlawful sexual intercourse, well knowing its evils as shown in various treatises, for instance, "Adultery is a baneful cause, one that causes corruption of the body in any form of existence"; from telling lies, well understanding its evils as laid down by the Lord of the world in Tesakujjātaka (64) and some other books thus : "To tell a lie is a great sin, one that robs the soil everywhere of its fertility. Owing to its evil effects cultivated fields sink as low as seven cubits. Consequently, food-stuffs like oil, honey, molasses *et caetera* together with medicinal herbs lose their nourishing power. The people who eat these insipid food-stuffs are afflicted with divers diseases;" and from gambling and spirituous and intoxicating drinks, considering their evils in the loss of visible wealth. He then made them zealous in such good acts as alms-giving, precept and so forth, by beat of drum on the fifth Sabbath day of every month, in conformity with the rule laid down by the compilers of the Law, thus following also the precedent furnished by the righteous kings of old, as related in Umapajjātaka (65) and some other books. He enjoined on his ministers and people the observance of the Sabbath duties as practised by the good, being well pleased with the precedent furnished by King Nimi as given in Magghadevasutta :—(66) "He who observes the Sabbath is allowed to enter into the royal presence ; he who does not observe the Sabbath is not allowed to do so." It is given in Manorathapūraṇi and other books that it was the traditional duty of the righteous kings of old to show favour to the world in four ways, i.e., 1. *Sassamedha*, to take one-tenth of the total product of the country as tax 2. *parisamedha*, to give food to the people once in six months. 3. *sammāpāsam*. to lend money to the people free of interest for a period of three years and 4. *vācāpeyyam* to enter into friendly conversation with the people. The king strictly followed this path taken by the righteous kings of old and showed favour to the world not only in these four ways but also in four other ways (67). Thus he showed favour to the world continuously and intermittently to a marvellous degree and in an unheard of manner. This is his patronage of the world.

(60) No. 530 page 267 of Vol. V, where for *mago* and *Tapane* our author reads *mugo* and *Tapanne*.

(61) No. 534, page 354 of Vol. V.

(62) No. 26 of Dīghanikaya, page 61, of Vol. III, P. T. S. edition.

(63) Mahavamsa, XXI 13-18.

(64) No. 521, page 109 of Vol. V.

(65) No. 546, page 330 of Vol. VI.

(66) Majjhimanikaya II, page 74.

(67) See note (17).

*(to be continued)*



## BURMESE ASTRONOMY (1)

BY  
THOS. P. DeSILVA

Some years ago a correspondent requested through the medium of an Indian Astronomo-Astrological Magazine, amateurs and adepts to impart their knowledge of the different systems (2) of our Astronomical calculations. Since then it has ever been my desire that Burma should participate in the contribution towards so desirable an achievement ; and seeing no sign of compliance with the request—from Burma at least—, I intended to take the matter up myself with a view to awaken the attention of others who are well qualified for such investigations and to incite them to pursue the subject more successfully.

But considering that I am no scholar and judge in Astronomy but only a busy man always away in the districts I cannot devote much of my leisure time to the study of the subject.

While labouring under these and other disadvantages and difficulties, I being an ardent admirer of one's national sciences take this present opportunity of recording in this Journal one of the well-known systems of our Burmese Method of Computing the Longitudes, etc., of the seven (or nine) planets etc., now in vogue all over the province of Burma and practically and chiefly deduced from the well-known Indian work “*Suryasiddhanta*” (3).

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(1) While the style of expression of the texts of the various treatises I have seen is generally brief and elliptical, in some cases to an extent that would make its purport entirely unintelligible the mode of expressing numbers is more so, by being enigmatical and epigrammatical which apparently and originally was intended to be mnemonic.

Some of these queer expressions are :

Masa, the months	which are 12 in number
Rasa, the tastes	6
Guna, qualities of all created things	3
Bheda, the vedas	4
Yuga, an age of the world	4
Rudra, group of gods	who are 11 in number
Bhashu-(vasus) a class of deities	8
Muni, alluding to the sages	7
Rama, 3 celebrated personages, viz : Parasurâma, Balarâma, Râmachandra or Sitarâma.	
Camma for two, kha for cipher, bana for 5, rupa for 1, jaya for 4, kranna for 2, bhuja for 2, meru for 1, and digha for 2.	
Deva for 33, khinka for 90, Devinga for 933, Rupa khinka rudra 11901, karinanda rupamanu for 14198	

As will be observed in the last, when the units of the figure contain more than one, it begins with the last and is taken in reverse order.

It will also be observed that the terms are more the symbolical expression and ideas of the Hindus than those of the Burmese.

So to an ordinarily educated Burman of to-day in his own tongue, these treatises without a tika or commentary, will be a subject that will not be very enticing for his study and research.

The chief commentaries I have come across are : one by the late Bhakara-Sayadaw and another by the Kanni-Atwin-woon-mingyi ; both dealing on the same method, i. e., Makaranda, and that too more profusely on the elements of the Calendar and the rudimentary parts of the Science. And when they do touch on the actual method of astronomical calculation, the explanations are rather vague and incomplete, so much so that there is a gap which needs filling up, especially in the one by Samdittha method.

Thanks to the keen interest taken by an eminent person like the Honorable A. M. B. Irwin, C. S. I., I. C. S., retired Judge, Chief Court of Lower Burma, the preceding portion of it has already been executed by him in his treatises on the Burmese Calendar ; and it is my endeavour here to fathom as much as possible the mystery of the rules and figures laid down in the latter part in Samdittha.

(2) The various systems in vogue among the Hindus are the Parahita or Siddhanta, Vakya and the Drigganitha methods.

(3) “*Suryasiddhanta*”, this is one of the most highly esteemed, best known, among the different Siddhantas or Hindu text-books of Astronomy, which professes to have been revealed by “*Surya*” the Sun, to a demon named “*Mayasûra*”, through “*Chaya-purusha*” a person who came out of the Sun, more than two millions of years ago, i. e., at the end of the Krita yuga.

I may say that this article save the Notes is a mere translation and based on our Pali and/or Burmese works. I therefore crave the reader's indulgence for any misrendering or errors which may have crept into the work through my neglect and incapacity and request those who are better acquainted with the Science than myself to improve or remedy the defects.

The following are some of the works that are already in existence in Pali and/or Burmese and that have any bearing on the subject referred to :—

*Printed and published and also in palm leaves :—*

Suryasiddhanta (published only last year)  
 Sara-vijjodaya (on the calculation of Solar and Lunar eclipses)  
 Saṁdiṭṭha (in prose and poetry)  
 Makaranda (2 methods, old and new)  
 U Kyaw Yan's abridged method of calculation of the Intercalary months and days (La-tat and yet-ngin-twet-nee)  
 Okpho-sayadaw's Adhi-māsa vinecchaya.  
 Bara-guṇi and Bara-kothi (partly Astrological)  
 Kyin-kan-Lo-yin-gyi-let-yo, Karāya, Adhi-kuppa kumbha, Boutti-let-yo, Atanāri, Sankram-nari, Bohtika.

*In palm leaves :—*

Rajamathan, Bhasuti, Adhimasa, Adhikuppa, Chulā-muni, Jānama-patti, Nāri-karaṇa, Nekyat-sara, Mahū-bala-chanda, Mahū Makaranda, Siddhanta-Chandrika, Siri Maha Suryasiddhanta, Adhi-māsa and yet-ngin, Sankranta, Sasinka-kuppatha, Mala-māsa, Laghu-sangraha, Akāsa-sastra, Bavari, Arya-siddhanta, Siddhanta-siromani, Graha-chanda, Jyotitattha, Beda-vijja, Grahalaghava, Brahma-siddhanta, Subba-bawma-siddhanta.

*Treatises on the Elements of the Burmese Calendar in English :*

- By Rev. Mr. Stilson (out of print but to be had in Burmese).
- By Mr. J. C. Clancey, F. R. A. S., F. R. G. S., F. S. I., etc., Assistant Director of Land Records and Agriculture, Burma, (See his Calculating Tables).
- By Mr. A. M. B., Irwin, C. S. I., Retired Indian Civil Service. (Burmese and Arakanese Calendars, 1909 edition).
- By Mr. Htoon Chan, B. A., B. L., Vakil of Calcutta High Court and Advocate of Burma Chief Court (Arakanese Calendar).

The two systems of computations now in use in Burma are the new Makaranda (derived from the juice of flowers) and Saṁdiṭṭha (thoroughly visible).

An Ephemeris for 40 years by the latter method (A. D. 1868 to 1908 or B.E. 1230 to 1269) has been compiled and after that regular annual issues (in advance) have been made, giving the daily positions of the eight planets, 27 nakkhats and tithis (Lunar asterisms and lunar days).

It will be seen from this that the latter is becoming more and more popular and is undoubtedly fast gaining ground over the former, owing to the revision which has brought up all the fractions which had been neglected by the former.

It is by the latter method that I propose to show by means of examples how to calculate the Longitudes of the planets, etc.

The above mentioned Treatises in English have already very clearly and elaborately dealt with the elements of the Science. These have therefore saved me much trouble in laying down rules, theories and axioms. I must ask my readers to refer to those works for the elements of its process. Irwin's Treatise is specially recommended, as the history, origin and other particulars are there also given which may make interesting reading.

*Required the true positions of the planets, Sun, Moon, Mars, Mercury, Jupiter, Venus, Saturn, Rahu and Ketu on Sunday at 10 o'clock ante meridian, on the 9th decrease of Pyatho 1235, Burmese era (4) or 11th January 1874 A. D., or Srimukha Samvatsara, Salivahana Saka 1795, (5) Pousha Navami Krishna Paksha.*

We have to proceed by what in Burmese is called Nhit-boh-twet-nee.

*Rule.—Add to the required era 3739, the result is Kaliyuga ; from the Kaliyuga deduct 4839, (or from the required Burmese era deduct 1100) (5a), remainder is termed Rassa (Nhit-kywin or short era). (6) (7). Multiply the the Rassa by 292207, to the product add 17742 to which sum add the quotient of the Rassa (if divisible) by 193. Divide the sum by 800, the quotient of which increased by one is the elapsed number of Savana days or Solar days, since the commencement of Samdittha era ; the remainder deducted from the divisor (800) is the number of Kyammats remaining at the beginning of the Solar year.*

Note down the Savana days in three places.

(4) There were various eras in Burma. The one given here is also called Poppasaw Raham era (the Monk-king) which has its commencement in 638-639 A.D. The eras are expired ones.

(5) When Salivahana Saka is given add 3179 years and the result is Kaliyuga years.

(5a) 1100 years are expunged, in order to obtain the Samdittha era or the number of years of the new Epoch. To earn an immortal fame, it is customary among Kings to expunge certain number of years of an Era, in the process of which and to enable it to carry forward all the adjustments made in the expunged era to the new one, it entails a laborious calculation. Though the current era had been expunged by 798 years by Mohnyin-min-tara-gyi this has not been successful.

(6) This is in contradistinction to another rule known in Burmese as " Yet-boh-twet-nee ", which is as given below with an example :—

From the required Burmese era deduct 1100, the remainder is rassa ; multiply this by 12 to the product add the number of months elapsed up to except the one given, the result is Suryamasa.

Write down the Suryamasa in two places: multiply in the first place by 28, to which product add 690 and also the quotient of the rassa divided by 475 ; the sum divided by 911, the quotient resulting therefrom is La-lun or Adhimasa and its remainder is Adhimasa-sesa.

Add Adhimasa to Suryamasa in the second place, the sum is Chandramasa ; multiply this by 30 ; to which result add the number of days elapsed, up to except one, of the month given. The sum is accumulated tithis.

Set this down in two places : in the first place, multiply by 11, from which product deduct the quotient of the rassa divided by 25 and to which result add 176 ; the sum divided by 703, the quotient is Khaya in days and its remainder is Avamani.

Deduct the Khaya from the accumulated tithis in the second place, the remainder is the Savana days.

The Savana days decreased by two and divided by seven, counting the remainder from Sunday, or the Savana days divided by seven, the remainder counting from Friday is the day sought of the date under calculation.

Multiply the Savana days by 800 ; from which product deduct 17742 and also the quotient of the rassa divided by 193, the result divided 292207, the quotient is the same as rassa and the remainder is Kyammat.

The Kyammat divided by 800, the quotient is Suddadin and the remainder is Ata-Kyammat i. e., the Kyammat at the commencement of the Solar year.

Example :

From Burmese Era Expunge	1235 1100 years
Multiply by	135 Rassa, the number of years since beginning of new Epoch.
Add months	12 1620 9 (from Tagu to Pyatho except one)
No. 1 Multiply by	1629 Suryamasa 28 13032 3258 45612
Add	690 constant brought over at beginning of Epoch.
And also rassa $\frac{135}{475} =$	0 adjustment
Divide by	911 ) 46302 ( 50 Adhimasa 45550
Remainder	752 Adhimasa sesa
No. 2. To Suryamasa	1629 Months
Add Adhimasa	50 ,
Chandramasa Multiply by	1679 Lunar months 30 50370
Add number of days	23 { 1 to 15 increase of moon = 15 days 1 to 9 decrease except one = 8 ,
No. 1. Accumulated tithis	50393 Lunar days 11 554323
Multiply by	Deduct Rassa $\frac{135}{25} =$ 5 554318
Add constant	176 brought over at beginning of epoch.
Divide by	703 ) 554494 ( 788 Khaya 553964
Remainder	530 Avamam.
No. 2. From accumulated tithis	50393 788 Khaya 49605 Savana days
Deduct	Savana days decreased by two and divided by 7 = $\frac{49603}{7}$ = Remainder one, counting from Sunday is Sunday, or Savana days $\frac{49605}{7}$ = Remainder 3, counting from Friday is Sunday the day sought of the date under calculation.
Savana day Multiply by	49605 800 39684000

Deduct	17742 constant brought over at beginning of new Epoch
& Rassa $\frac{135}{193} =$	0
Divide by 292207 )	<u>39666258</u> ( 135 this is the same as rassa 39447945
Divide by 800 )	<u>218313</u> Kyammats ( 272 Suddadin 217600
Remainder	713 Ata-Kyammat.

(7) The Burmese or rather the system of Samdittha, alike the Suryasiddhanta, reckons the natural day for Astronomical purposes from midnight to midnight, whereas the Hindus mode is generally from sunrise to sunrise.

Burmese : 60 anukaras = one kara ; 60 of these = one bijana ; 60 of these = one nari and 60 of these = one natural, civil, terrestrial or Savana day = (in English solar day).

Suryasiddhanta : 60 naris make a sidereal day and night; 30 of these is composed a month ; a civil (savana) month consists as many Sunrise ; a lunar month of as many lunar days (tithis) ; a solar (saura) month is determined by the entrance of the Sun into a sign of the Zodiac ; twelve months make a year.

The year consists  $\frac{1577917828}{4320000}$  Savana days (see below) according to

Suryasiddhanta	365 days	15 naris	31 bijanas	31 karas	24 anukaras
Samdittha	365 "	15 "	31 "	30 "	0 "
Making a difference of	0	0	0	1	24 "

Samdittha makes up for this difference by adjustment of one Kyammat, additive, for every 193 years over the Rassa ; i. e.,

As one year =  $1 \frac{4}{5}$  or  $1 \frac{2}{5}$  Kara short taken  $\therefore x$  no. of years = when accumulated to one

Kyammat or  $\frac{1 \text{ Savana day}}{800} \times 60n \times 60b \times 60k$  or  $\frac{216000K}{800} - \frac{1 \text{ yr} \times 216000 \times 5}{800 \times 7} = \frac{1350}{7}$

= 193 years.

Since Samdittha Solar year =  $365 \frac{55890}{216000}$  or  $365 \frac{207}{800}$  or  $\frac{292207}{800}$

$\therefore$  the number of days sought will be :—

As (1 solar year : 135 years ::  $\frac{292207}{800} : x$ ) + 17742 - ( $\frac{R135}{193}$ )

The constant 17742 Kyammats, additive ( $\frac{17742}{800}$ ) = 22 days 10 naris 39 bijanas, is adjustment brought over at the beginning of the Samdittha epoch, inclusive of the undermentioned quantity.

The calculation is made for the then capital of Burma proper (Amarapoora desantara) i. e., the difference in time with Lanca 3 naris 18 bijanas =  $11880 \div \frac{216000}{800}$  44 Kyammats, has been

included in above constant. After this, the adjustment for the difference of longitude with other places in Burma may be neglected, as the quantity is so very insignificant that the calculation cannot be very perceptibly effected.

In 4320000 years there are  
From which deduct Solar revolutions

$\frac{1582237828}{4320000}$  Asterism days  
 $\frac{4320000}{4320000}$  will give

Natural, civil or terrestrial or Savana

$\frac{1577917828}{4320000}$  days

And there are Moon's  
Deduct Solar revolutions (Sun's)

$\frac{57753336}{4320000}$  Sidereal revolutions  
do.

Gives Moon's Synodical revolutions  
Deduct  $(4320000 \times 12 \text{ months})$

$\frac{53433336}{51840000}$  Lunar months (Chandramasa)  
 $\frac{51840000}{51840000}$  Solar months (Sauramasa)

Gives Intercalary months	1593336 Adhimasa
To lunar months $53433336 \times 30$ Lunar days will give tithis.	1603000080 Lunar days
From which deduct	1577917828 Savana days
Gives Omitted Lunar days	25082252 Tithikshaya

The above therefore may be worked out in accordance with Suryasiddhanta as follows :—

As 4320000 yrs : 4974 yrs :: 1577917828 Savana days :  $x - x$  Savana days and Remainder as Gata (past) Kyammats.

As 1577917828 Savana days :  $x$  Savana days :: 25082252 Kshaya days :  $x$  Kshaya days and Remainder as Avamam.

$x$  Savanas days = Remainder counting from Friday is the Ata-ne' of the Solar New Year.

$\frac{7}{x}$  Savanas days +  $x$  Kshayas =  $x$  Accumulated tithis,

$\frac{x \text{ Accumulated tithis}}{30}$  =  $x$  Chandramasa and Remainder Yet-Lun (epact)

The gata Kyammats deducted from 4320000 the remainder is gamya ( to be past ) Kyammats at the beginning of the Solar Year.

Instead of the figure 4974 years in the foregoing, it is more appropriate to take 3892974 years, for of the four (4) Yugas,

1728000	years have elapsed in Krita yuga	
1296000	do.	Treta yuga
864000	do.	Dwapara yuga
(up to B. E. 1235) 4974	do.	Kali yuga

It is quite plainly seen that the above if put into actual solution is rather a long and tedious calculation to be undergone and to curtail which Samdittha was invented as an abridged system.

11 Khaya days are the difference between 692 Savana days and 703 tithis, which is an approximation to  $\frac{1577917828}{1603000080}$  of Savana day=one tithi.

By reducing this fraction into its lowest term we have  $\frac{394479457}{400750020}$  (which cannot be any further reduced) and the mean lunation of a day, gives 59n-3bij-40k-13-99271 anukaras.

For the sake of curtailing a long calculation Samdittha (so also Makaranda) by subtracting 13 from the numerator and adding 51 to the denominator, makes  $\frac{394479444}{400750071}$  reducible by the

greatest common multiple of 570057 to  $\frac{692}{703}$ , thus giving the mean lunation of a day by this method 59 naris 3 bijanas 40 karas 11-94879 anukaras and making a small difference of 2 anukaras and fraction between the two systems.

Samdittha to adjust this difference of excess makes it subtractive by the equivalent of one Avamam in every 25 years of the rassa i. e.

2. 04392 anukaras daily difference, in excess
- about 1 kara 1. 3176 anukaras difference, monthly excess
- about 12 karas 15. 8112 anukaras difference yearly excess

As one year = about  $12 \frac{16}{60} \text{ Karas}$  or  $735 \frac{8112}{10000}$  anukaras in excess

$\therefore x$  no. of years = when accumulated to one Avamam of  $\frac{216000}{703} \text{ Karas} = \frac{1 \times 216000 \times 60 \times 10000}{7358112 \times 703}$   
 $= \frac{129600000000}{5172752736} = 25$  years.

The constant 176 Avamam additive is ( $\frac{176}{692}$ ) — 15 naris 15 bijanas, 36 karas, 25 anukaras, adjustment brought over at the beginning of the epoch.

In the First place, multiply by 11, from which product deduct the quotient obtained of the Rassa divided by 25, to which result add 176. The sum divided by 692, the quotient is called Khaya (Kshaya) and the remainder is Avamāṁ (Avama).

Add the Khaya to the figures in the Second place, the sum is the accumulated tithis. This divided by 30, the quotient is Chandramāsa (Lunar months) and the remainder yet-lun (epact, moon's age in tithi at commencement and in excess of Solar year.)

And in the Third place, divide the Savana days by seven, the remainder counting from Friday, is the Atā-ne (Solar New Year Day Mesha Sankranti).

To Burmese Era	1235	
Add	3739 to bring to	
Kaliyuga	4974 years	
Take (for New Era)	4839 or to curtail calculation,	
From Burmese era	1235	
Take	1100	= 135 Rassa (short era)
Multiply by	292207	
	39447945	
Add constant	17742 (difference brought over at beginning of era)	
	39465687	
Add Rassa 135 ÷ 193 =	0	
Divide by	800 ) 39465687 ( 49332 days	
	39465600	
Remainder of the old year	87 Kyammats	
From Divisor	800	
Take Remainder	87	
Remaining at the beginning of Solar year	713 Kyammats } for which add 1 day	
		49333 Savana or
No. 1	49333 Savana days	Solar days
Multiply by	11	
	542663	
Take Rassa 135 ÷ 25 =	5	
	542658	
Add constant	176 (difference brought over at new epoch)	
Divide by 692 ) 542834 ( 784 Khayas		
	542528	
Remainder	306 Avamāṁ	
No. 2	49333 Savana days	
Add as above obtained	784 Khayas	

Divide by

30 ) 50117 Accumulated tithis

1670—17 lunar days or yet-lun at commencement of solar year, i.e., 2nd decrease of the first Burmese lunar month, i.e., Tagu (Chitra).

Nos. 1 &amp; 2 are also thus arrived at :—

$$\text{As } (692 \text{ Savana days} : 49333 \text{ Savana days} - R \frac{135}{25} + 176) :: 703 \text{ tithis} : x$$

$$\begin{aligned} & (49333 \times 703) - \frac{135}{25} + 176 \\ = & \frac{692}{\overline{49333}} = \frac{703}{\overline{34681099}} \end{aligned}$$

$$\begin{aligned} & - \frac{135}{25} + 176 = 176.5 \\ = & \frac{171}{\overline{692})} \end{aligned}$$

$$\begin{aligned} & 34681270 \text{ ( 50117 accumulated tithis)} \\ & 34680964 \end{aligned}$$

$$\begin{array}{r} \text{Avamām} \quad 306 \\ \hline \end{array}$$

No. 3.

Divide by 7 ) 49333 Savana days

7047 — 4 counting from Friday (the day on which the era begins) is Monday.

(8) The required date being given as the 9th decrease of the 10th Burmese month, Pyatho, (Pousha 9th, Krishna paksha or 11th January) we have to find the number of days expired since Atā-yet, i.e., from beginning of Solar New Year day to this given date.

This is called Suddadin (Suddadinam) which is arrived at as follows :—

Tagu	12 days (29-17 days see above)
Kason	30 days
Nayon	29 days
Waso	30 days
Wagaung	29 days
Tawthalin	30 days
Thadingyut	29 days
Tasaungmon	30 days
Nadaw	29 days
Pyatho	24 days (up to full moon 15 days and 9 days in decrease of moon)

272 days Suddadin and

713 Kyammats remaining at beginning of solar year (see page 29).

(8) The Burmese year is a Luni-Solar one.

The names of the Burmese ordinary months are :—

Tagu, Kason, Nayon, Waso, Wagaung, Tawthalin, Thadingyut, Tasaungmon, Nadaw, Pyatho, Tabodwe and Tabaung.

As the mean lunation is about 29½ mean solar days, these months contain 29 and 30 days, alternately, = 354 days in an ordinary year or a non-wa-tat year.

There are two others beside this, called Wa-ngai-tat and Wa-gyi-tat years, respectively consisting of 384 and 385 days (meaning small lent and big lent repeated.)

In the former an insertion of second Waso of 30 days is made between Waso and Wagaung, while in the latter in addition to this insertion, the month Nayon has 30 days.

## LONGITUDE OF THE SUN

(9) Rule :—Suddadin reduced to Kyammats (i.e. Suddadin multiply by 800 plus the Kyammats remaining at the beginning of the year) multiplied by 1000, from which product subtract the product obtained of the Suddadin multiplied by six ; the remainder divided by 13528 the quotient in minutes, reduced to signs, degrees and minutes, is the sun's mean longitude (in Burmese Taninganway madhya).

*As per calculation on page 30 :—*

$$\begin{array}{r}
 & 272 \text{ days Suddadin and } 713 \text{ Kyammats} \\
 \text{Multiply by} & 800 \\
 \hline
 & 217600 \\
 \text{Add} & 713 \text{ Kyammats (remaining at beginning of year)} \\
 \hline
 & 218313 \\
 \text{Multiply by} & 1000 \\
 \hline
 & 218313000 \\
 \text{Take (272 Suddadin } & \times 6) = 1632 \\
 \hline
 \end{array}$$

(9) 60 seconds or viliptas make a minute or lipta; 60 of these a degree or amsa ; 30 of these constitute a sign or rasi ; of 12 of the last is composed a revolution or bhagana.

The names of rasis are : Mesha, Prisha, Medon, Karakat, Seinh, Kan, Tu, Briccha, Dhanu Makara, Kum and Mem.

This rule is on the principle of revolution of 12 Signs or

As 21600 liptas : one lipta : : 292207 Kyammats :  $x = 13\frac{528}{1000}$  Kyts.

Since one lipta : 1000 liptas : : 13.528 Kyts :  $x = 13528$  Kyammats.

$$\therefore 13528 \text{ Kyammats} : 218313 \text{ Kyammats} : : 1000 \text{ liptas} : x \text{ liptas} = \frac{218313 \times 1000}{13528}$$

This without the deduction for correction viz : — six times Suddadin divided by 13528 ( $\frac{\text{Suddadin} \times 6}{13528}$ ) is a little in excess, hence to adjust which, is the same as when deducting Suddadin  $\times 6$ , before dividing by 13528.

The excess and adjustment are as seen from the illustrations, below :—

The ordinary process :—

$$\text{As } 292207 \text{ Kyammats} : 800 \text{ Kyammats or } 1 \text{ Sav day} : : 21600 \text{ liptas} : x = \frac{21600 \times 800}{292207}$$

$$= 59. 13616 \text{ liptas.} \\ \text{Suryasiddhanta :—}$$

$$\text{As } 1577917828 \text{ Savana days} : \text{one day} : : 4320000 \text{ Sid. Rev.} : x = \frac{4320000 \times 12 \times 30 \times 60}{1577917828}$$

$$= \frac{93312000000}{1577917828} = 59. 13616 \text{ liptas.}$$

As per above with correction :—

$$\text{As } 13528 \text{ Kyanumats} : (800 \text{ Kyts or } 1 \text{ Sav. day.} : : 1000 \text{ liptas} - 6) : x = \frac{800 \times 1000(-6)}{13528} =$$

$$\frac{799994}{13528} - 59. 13616 \text{ liptas.}$$

As above without correction :

$$\text{As } 13528 \text{ Kyammats} : 800 \text{ Kyts or } 1 \text{ Sav. day} : : 1000 \text{ liptas} : x = \frac{800 \times 1000}{13528} = \frac{800000}{13528} =$$

59. 13675 liptas.

No further adjustment is needed for desantara, this is already done in the constant 17742 (see Notes on page 27.)

Divide by 13528)	218311368 (	16137	minutes
	218301338		
For remainder	10030 add	1	minute
Reduce	60 )	16138	minutes
	30) 268—58 minutes		
Sun's mean longitude at midnight B. E.	{ Ravimadhyā 8s. 28d. 58m. 1235, 9th decrease of Pyatho, Sunday }		
Take as per table below, difference in day's duration		— —	59
Previous day at midnight i.e. Saturday		8s. 27d. 59m.	

Planets.	Corrected Daily motion.			Apsides Bhagana.	Corrected Mandocha. (10)			Observed Correction by Samdittha.		
	0°	59'	8"		2s	17°	17'	..	..	..
Sun ... ...	0°	59'	8"	387	2s	17°	17'	..	..	
Moon (Sidereal) ...	13	10	35	..	*	..	..	0	52	Subtractive. do.
Oocha (Apsis) ...	0	6	41	..	..	..	..	4	21	do.
Mars ... ...	0	31	26	204	4	11	3	1	14	Additive.
Mercury ...	4	5	32	368	7	23	28	4	2	Subtractive. do.
Jupiter ...	0	4	59	900	5	20	22	3	0	do.
Venus ...	1	36	8	535	2	17	52	6	3	do.
Saturn ...	0	2	0	39	8	8	37	5	2	Additive.
Rahu (Moon's node) 0	3	11	.	..	..	..	..	2	27	do.
Moon (Synodical) ...	12	11	27	..	..	..	..	..	..	.

\* Varies according to calculation ; (40 + 12).

(10) These are obtained according to the rules of Suryasiddhanta in a Kalpa, i. e., 1000 times a Maha yuga — 432000000 years.

The number of Solar years before the end of

Krita yuga	1953720000	years
Treta "	1296000	"
Dwapara "	864000	"
Up to time of calculation Kali "	4974	"
	1955884974	"

As 4320000000 Kalpa yrs. : 1955884974 yrs. : : 387 Rev. of Sun's Apsis : x

$$= \frac{1955884974 \times 387}{4320000000} = \frac{756927484938}{4320000000} = 175 \text{ Revolutions } 2 \text{ signs } 17 \text{ degrees } 17 \text{ minutes Sun's}$$

Mandocha.

For the apsides of the planets Mercury, Venus, Mars, Jupiter and Saturn, similar mode of calculation is resorted to, using their respective number of bhaganas.

## TRUE LONGITUDE OF THE SUN (PHUTA).

RULE :—From its Oocha (*Apogee in Signs, degrees and minutes as per Table see page 32*) deduct the Madhya (*mean longitude*). If from the Oocha sign it is not subtractable add 12 to it and then subtract. The remainder is Manda. Divide the sign in this by three the quotient is termed Gola. The remainder of gola with the fractions (in degrees, minutes etc.) brought down from Manda is called Argument, which when Gola is 0 or 2, (even) take (as it is) for Bhuja, and when Gola is 1 or 3, (uneven or odd) deduct it from 3 signs, the remainder is Bhuja.

(11) Bhuja reduced to minutes divided by 225, the quotient is Khandam and remainder is Vivara. Refer as per this Khandam obtained to the corresponding Jya and the Jya next to it (in the Manda Table) the difference (also called vivara) in minutes, multiplied by vivara of Khandam above obtained (when Khandam is zero (0) multiply by the first Jya) the product divided by 225 ; the quotient added to the Jya of the Khandam obtained = Bhuja-phala, which is additive or subtractive to the Madhya according to Gola :

The results given in the above Table are almost invariably fixed for a period of number of years past and to come. On account of the slow motion of the nodes and apsides, it would require a good length of time, which is termed the Anomalistic period, i. e., Kalpa, before the planets could return to the same situation again, or to vary the result of the computation. But this would not be so for the Moon's apsis, as it is treated in a different manner, hence the remark "varies according to calculation", the method of calculating this is given on page 35.

Planets.	Number of revolutions in Mahayuga 4320000 years of 1577917828 Savana days.		Single Revolution.					
	Bhagana		D. N. B. K. Anuk					
	Madhya	Sighra						
Sun	..	..	4320000	..	365	15	31	31 . 4
Mercury	..	..	..	17937060	87	58	10	55 . 7
Venus	..	..	..	7022376	224	41	54	50 . 6
Mars	..	..	2296832	..	686	59	50	58 . 7
Jupiter	..	..	364220	..	4332	19	14	20 . 9
Saturn	..	..	146568	..	10765	46	23	4 . 1
Moon's Sidereal revolutions	..	57753336	..		27	19	18	1 . 6
Moon's Synodical revolutions	..	53433336	..		29	31	50	7 . 0
Moon's Rev. of apsis (uccha)	..	488203	(Apogee)		3232	5	37	13 . 6
Moon's Rev. of node (pata)	..	232238	(Retro-grade.)		6794	23	59	23 . 5

i. e. As 4320000 Rev. : 1 Rev. :: 1577917828 days : x as above. The remaining are also similarly calculated.

(11) Eight Jyas or tabular units are reckoned to one sign and one Jya to  $3\frac{1}{2}$  degrees = 225 minutes

The numbers in the Table extend only up to  $24 = 90$  degrees = 3 signs. These are taken as to include all the equations from the least to the greatest and the equation is not carried beyond minutes.

Corresponding to the quotient is called the Gata (the past) sine, and the next sine is called Gamya (to be past) sine.

Note when Gola 0 or 1, Meshadi, add to the mean Longitude, and when 2 or 3, Tuladi, subtract from the mean longitude ; the result is Phuṭa (true longitude).

From       $2s\ 17d\ 17m$  Sun's apogee as per Table (see page 32)  
 Take       $8\ 27\ 59$  Sun's (madhya) mean longitude (see page 32)

Divide by 3 )  $5\ 19\ 18$  Manda

$Gola\ 1\ \&\ 2s\ 19d\ 18m$  which take from  $3s\ 2s\ 19d\ 18m$

Bhuja  $0\ 10\ 42$  or  $642m$

As  $3d\ 45m$  or  $225m$  :  $642m$  :: 1 jya :  $x = \frac{642}{225}$  or 2 Jya &  $192m$

Khandam 2 Jya =  $17$ ) difference of  $9ms$   
 3 Jya =  $26$ ) as  $3d\ 45m$  or  $225m$  :  $192m$  ::  $9m$  :  $x = \frac{192 \times 9}{225} = 7$

minutes which added to Khandam 2 Jya =  $17 + 7 = 24$  minutes  
 and as Gola is one which signifies additive for Meshadi we have :—

Madhya  $8s\ 27d\ 59m$   
 Add       $0\ 0\ 24$

True Longitude  $8s\ 28d\ 23m$  Sun's (phuṭa) on Saturday at midnight.

From       $2s\ 17d\ 17m$  Sun's apogee as per Table. (see page 32)  
 Take       $8\ 28\ 58$  Sun's mean on Sunday at midnight (see page 32.)

Divide by 3 )  $5\ 18\ 19$

$Gola\ 1\ \&\ 2s\ 18d\ 19m$  which take from  $3s$

$2s\ 18d\ 19m$

Bhuja  $0\ 11\ 41$  or  $701m$

As  $3d\ 45m$  or  $225m$  :  $701m$  :: 1 Jya :  $x = \frac{701}{225}$  or 3 Jya &  $26m$

Khandam 3 Jya =  $26$ ) difference  $8ms$   
 4 Jya =  $34$ )

As  $3d\ 45m$  or  $225m$  :  $26m$  ::  $8m$  :  $x = \frac{26 \times 8}{225} = 1$  minute which added

to Khadām 3 Jya =  $26 + 1 = 27m$  and as Gola is one signifying Meshadi (additive) we have :—

Madhya       $8s\ 28d\ 58m$  Sun's on Sunday at midnight  
 Add           $0\ 0\ 27$  as above obtained

Sun's true longitude  $8\ 29\ 25$  Phuṭa on Sunday at midnight  
 Take true longitude  $8\ 28\ 23$  Phuṭa on Saturday at midnight

∴ difference  $0\ 1\ 2$  or  $62m$  for 24 hrs.

As 24 hrs. : 10 hrs. ::  $62m : \frac{620}{24} = 25ms$

To Saturday at midnight Sun  $8s\ 28d\ 23m$   
 Add 10 hrs. duration Sun  $0\ 0\ 25$

Sunday at 10 o'clock a.m.  $8\ 28\ 48$  Sun's true position

## MOON'S MANDOCHA (MOON'S APOGEE) (12)

RULE :—Add together the Savana days, Suddadin as above obtained and 318, from which deduct the quotient obtained by dividing the Rassa by 94 (remainder of which not to be rejected). The result divided by 3232 rejecting the quotient reduce remainder by multiplying by 12, 30 & 60 successively and dividing each product by 3232, for signs, degrees and minutes.

The above remainder which was not rejected divided by 14, the quotient in minutes deduct from the result obtained in signs etc., which last remainder decreased in the minutes by one and deduct for observed correction 4 deg. 20ms the result is the Moon's Mandocha.

To	49333	Savana days
Add	272	Suddadin
do.	318 adjustment brought over at epoch	
	<hr/>	
	49923	

Take  $1 = \frac{135}{94}$  Rassa = 1 & Rem. 41

---

(12.) This is the number of days elapsed (272 days) since the beginning of the solar year to given date of calculation; added to which is the number of solar days (49333 days) elapsed since new epoch, the result is the whole Suddadin since the beginning of Samdittha era, i.e.,  $49333 + 272 = 49605$  days up to required date of calculation. This divided by seven the remainder is three, counting from Friday the day on which the era begins, gives Sunday as the weekday for which the calculation is made, thus proving that the above foregoing calculations are correct.

The above is worked out as follows:=

As 3232 days without fraction : 49605 days :: one rev. of 12S :  $x = 15$  Rev.  
4S 5d 19m

To this is added the adjustment at beginning of epoch of 318 days :

As 3232 days: 318 days :: one rev. of 12S: $x =$	<hr style="width: 100px; margin-left: 10px;"/>	1S 5d 25m
	<hr style="width: 100px; margin-left: 10px;"/>	Total 15 Rev. 5S 10d 44m

As the fraction of the Moon's apogee per above is not yet accounted for, the divisor is less and the quotient more than the real quantity and to adjust which Samdittha makes it subtractive by about one day to every 94 years of the rassa and one minute of motion to every 14 years of this remainder. In this instance to about  $1\frac{1}{2}$  days :

As 3232 days :  $1\frac{1}{2}$  day :: 1 rev. of 12S:  $x = \frac{1\frac{1}{2} \times 12 \times 30 \times 60}{3232} = \frac{32400}{3232} =$  about 10 minutes which decreased from above 5S 10d 44m = 5S 10d 34m

Or As 3232 days : 49923 days :: one rev:  $x = \frac{49923}{3232} = 15R 5S 10d 44m$

According to Suryasiddhanta :—

As 1577917828 D: 49923 D: : 488203 Time of revn :  $x = \frac{49923 \times 488203}{1577917828} - \frac{24372558369}{1577917828} =$

15 Rev. 5S. 10d. 34m., making a difference of 10 minutes of motion which is the quantity in excess for a period of 135 years for not taking the fraction into account.

As 135 years = 10m in excess

$x$  no. of years = 7m which is the equivalent of a daily motion of the Moon's apsis.

$= \frac{135 \times 7}{10} - \frac{945}{10} = 94$  years to accumulate to one day.

Since 94 years = 1 day or 7m of motion of Moon's apsis

$x$  No. of years = for 1 do do  $= \frac{94 \times 1}{7} - \frac{94}{7} = 14$  years for every 1m of motion.

Divide by 3232 ) 49922 ( 15 Rejected

$$\begin{array}{r} 48480 \\ \hline 1442 \end{array} \text{ ( As } 3232 : 1442 :: 1 \text{ or } 12 : x = \frac{1442 \times 12}{3232}$$

12 Signs

$$\overline{17304} \text{ ( } 5$$

$$\begin{array}{r} 16160 \\ \hline 1144 \end{array}$$

30 degrees

$$\overline{34320}$$

$$\overline{32320} \text{ ( } 10$$

$$\overline{2000}$$

60 Minutes

$$\overline{120000} \text{ ( } 37$$

$$\overline{9696}$$

$$\overline{23040}$$

5s 10d 37m

Deduct 0 0 3 ( Rem. not rejected  $\frac{41}{14}$ )

Deduct 0 4 21 adjustment

Moon's Apogee midnight 5 6 13 on Sunday  
Deduct daily motion 0 0 6

Moon's Apogee midnight 5 6 7 Saturday

## MOON'S MEAN LONGITUDE (MADHYA)

RULE :—Put down the Suddadin as above obtained in two places. In the first place, reduce the Suddadin to Avamam (i. e., Multiply the Suddadin by 11, add the Atā Avamam,) the sum divided by 692, the remainder of which is the Avamam of the day under calculation and the quotient added to Suddadin noted down in the second place and to which is also added the Ata-yet-lun, the sum divided by 30, rejecting the quotient, take remainder as tithis. Tithis multiplied by 12, product divided by 30, the result is in Signs—degrees. (13.)

Set the above Avamam of the day under calculation down in two places :—

Multiply the Avamam in the first place by 7, product divided by 173 which quotient add to the Avamam noted down in the second place the sum divided by 60, the result in degrees and minutes add to above result deducting 40 minutes for desantara (difference of time between Lanca and place of calculation) and also 12 minutes for correction from observation. The last remainder added on to Madhya (mean) Sun, the result is the position of mean Moon (in Burmese Taninlā-madhyā or Madima Tsan).

No. 1                            272 Suddadin and 306 Atā Avamam

Multiply by                    11

2992

Add                            306 Avamam

3298

Divide by        692 )      3298 ( 4

2768

530 Avamam of the day

(13). This is found on this principle :—

As 30 tithis : one tithi : : 12 rasis :  $x = \frac{2}{5}$  rasi or 12 amsas

∴ as 1 tithi :  $\frac{1}{692}$  tithi : : 12 amsas :  $x = \frac{12 \times 60}{692} = \frac{720}{692} = 1 \frac{7}{173}$  hence the

$\frac{7}{173}$  ms = degrees and mins.

60

The whole process is arrived at as follows :—

As  $692 D : 272 D : 703$  tithis :  $x = 272 \frac{306}{703} \times 703 = \frac{191522}{692} = 276 \frac{530}{692}$  Lunar days.

692

Add yet-loon difference between beginning of Solar and Lunar years  $\frac{17}{293} \frac{530}{692}$  Lunar days.  
Since beginning of Lunar year up to date of calculation

As 30 tithis :  $293 \frac{530}{692}$  tithis : : Rev. of 12S. :  $x = 293 \frac{530}{692} \times 12 = \frac{203286 \times 12}{692 \times 30} = \frac{2439432}{20760} = \frac{12}{30}$

117S. 15d. 11m. = 9S. 15d. 11m.

From which the deduction of 40m is made for desantara. The rate of daily synodical motion of Moon is taken as 12 degrees or so. The difference of time between Lanca and place of calculation as given on page 27, is  $3 \frac{18}{60}$  naris.

As 60 naris :  $3 \frac{3}{10}$  naris : : 12d 11m or 731m :  $x = \frac{33 \times 731}{10 \times 60} = \frac{8041}{200} = 40$  minutes

Being to the East of the prime meridian, it is subtractive by this quantity (if to the West will be additive).

No. 2	272 day Suddadin
Add	17 days yet-lun (lunar days)
	$\frac{4}{692} \frac{530}{692}$
Divide by	30 ) 293 $\frac{530}{692}$ ( 9 Rejected 270  23 $\frac{530}{692}$ tithis
	23 tithis 12 Signs
	30 ) 276 ( 9 270  6 degrees
No. 1	530 Avamām
Multiply by	7
Divide by	173 ) 3710 ( 21 quotient 3633  which add to above = 9s 6d (+ 9d 11m) = 9s 15d 11m
or	As 30 deg.: 23 $\frac{530}{692}$ deg.: : 12 Signs : x = $\frac{8223}{346} \times \frac{12}{30} = \frac{16446}{1730} = 9s 15d 11m.$
Moon's Sunday midnight	9s 15d 11m
Deduct adjustment, observed correction 0 0 12m } = 52	Desantara 0 0 40 }
Moon's mean position midnight	9s 14d 19m Sunday
Add Sun's position midninght	8 28 58 "
Moon's mean at midnight	6 13 17 difference
Deduct daily motion	0 13 11
Moon's mean at midnight	6 0 6 Saturday

## MOON'S TRUE LONGITUDE

A similar method of calculation as the Sun, is resorted to for this ; and the same rule applies for referring to their respective Jyas from Khandam and for taking out equations from Tables for this and the other planets.

From, at midnight Moon's Apogee 5s 6d 7m on Saturday  
Take, at midnight Moon's mean 6 0 6 ,

Divide by	3 ) 11 6 1 Manda
	Gola 3 & 2s 6d 1m which deduct
from 3s	
2 6 1	
Bhuja	0 23 59 = 1439 ms.
As 3d 45m or 225m : 1439m : : 1 Jya : x = $\frac{1439}{225} = 6$ Jyas and 89 Rem.	
6 Jya = 116 } 18m difference	7 " = 134 }

As  $225m : 89m :: 18m : x = \frac{89 \times 18}{225} = 7m$  which add to the equivalent of 6 Jyas =  $116 + 7 = 123m$  or 2 deg. and 3ms and as gola 3 signifies subtractive :—

From  $6s\ 0d\ 6m$  Moon's madhya  
Take  $0\ 2\ 3$  as per above Bhujaphala

Moon's true position  $\underline{\quad\quad\quad}$   $5\ 28\ 3$  on Saturday midnight

From, midnight Moon's Apogee  $5s\ 6d\ 13m$  on Sunday  
Take, midnight Moon's mean  $6\ 13\ 17$  "

Divide by  $3\ )\ \underline{10\ 22\ 56}$  Anomaly

Gola 3 & 1s  $22d\ 56m$  which deduct ;  
From  $3s\ \underline{1\ 22\ 56}$

Bhuja  $1\ 7\ 4$  or  $2224m$

As  $225m : 2224m :: 1\ Jya : x = \frac{2224}{225} = 9$  Jyas and  $199m$  Rem.

$9\ Jya = 169m$  }  
 $10\ " = 185$  }  $16m$  difference

As  $225m : 199m :: 16m : x = \frac{3184}{225}$  or  $14m$  which add on to the equivalent of

$9\ Jya = 169 + 14 = 183m$  or 3 deg. & 3m and as Gola 3 signifies subtractive :—

From  $6s\ 13d\ 17m$   
Take  $0\ 3\ 3$

Moon's true longitude  $\underline{\quad\quad\quad}$   $6\ 10\ 14$  midnight on Sunday

From, midnight True Moon Sunday  $6s\ 10d\ 14m$   
Take, midnight True Moon Saturday  $5\ 28\ 3$

Difference of daily motion  $\underline{\quad\quad\quad}$   $0\ 12\ 11$

As 24 hrs. : 10 hrs. ::  $12d\ 11m : x = \frac{731}{144} = 5d\ 4m$

To Saturday at midnight  $5s\ 28d\ 3m$  Moon's true position  
Add 10 hrs. motion  $0\ 5\ 4$

Sunday at 10 a.m.  $\underline{\quad\quad\quad}$   $6\ 3\ 7$  Moon's true position.

*The Accompanying Tables are deduced according to the rules of Suryasiddhanta*

Khandam.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Sun	9	17	26	34	43	51	59	66	73	80	87	93	99	104
Moon	20	40	60	79	98	116	134	152	169	185	201	215	228	241
Mars	47	93	139	184	227	270	311	352	390	426	461	494	524	553
Mercury	19	37	55	73	90	107	123	138	153	167	180	193	205	215
MANDA		JYA.		Equations use		For two middle		Equations use		For first and last		Equations use		
Jupiter	21	41	61	81	100	119	137	155	172	188	204	218	232	244
Venus	7	15	22	29	36	43	49	55	61	66	71	76	81	85
Saturn	30	60	90	120	149	178	205	232	257	282	305	327	347	366
MAKARA		JYA.		Equations use		For two middle		Equations use		For first and last		Equations use		
Mars	89	178	266	354	442	529	617	704	790	876	961	1046	1131	1214
Mercury	61	121	181	241	301	360	418	476	533	590	645	699	752	803
Jupiter	37	73	110	146	182	218	254	289	323	357	389	421	451	481
Venus	95	189	284	378	472	566	659	753	846	938	1031	1122	1213	1305
Saturn	22	44	66	88	109	130	150	172	192	211	230	248	265	281
KARKI		JYA.		Equations use		For two middle		Equations use		For first and last		Equations use		
Mars	418	812	1163	1465	1713	1913	2071	2192	2280	2344	2386	2409	2417	2413
Mercury	130	260	386	516	619	723	820	907	985	1053	1111	1161	1203	1235
Jupiter	54	108	162	215	266	315	362	407	449	488	524	556	585	611
Venus	590	1127	1578	1933	2205	2410	2555	2656	2723	2764	2782	2770	2745	2745
Saturn	27	55	82	108	134	160	184	208	230	252	272	290	307	322

The Accompanying Tables are deduced according to the rules of *Suryasiddhanta*—continued.

Khandain,		15	16	17	18	19	20	21	22	23	24	
		Sun	...	109	113	117	121	124	126	128	129	130
		Moon	...	252	263	272	280	287	293	297	300	302
		Mars	...	579	602	623	641	656	669	679	686	691
		Mercury	...	225	234	242	249	254	259	263	265	267
Equations use for two middle equations use for 1 & 2 use		Jupiter	...	256	266	275	284	290	296	300	303	306
Equations use for two middle equations use for 1 & 0 use		Venus	...	89	92	95	98	100	102	103	105	105
Equations use for two middle equations use for 1 & 0 use		Saturn	...	383	399	413	425	436	444	451	456	459
Equations use for two middle equations use for 1 & 0 use		Mars	...	1295	1376	1456	1534	1611	1687	1760	1832	1902
Equations use for two middle equations use for 1 & 0 use		Mercury	...	854	902	949	994	1036	1076	1113	1148	1180
Equations use for two middle equations use for 1 & 0 use		Jupiter	...	509	535	560	583	605	624	641	656	668
Equations use for two middle equations use for 1 & 0 use		Venus	...	1394	1484	1571	1658	1743	1827	1911	1993	2073
Equations use for two middle equations use for 1 & 0 use		Saturn	...	297	312	325	337	348	357	365	372	377
Equations use for first and last equations use for 1 & 2 use		Mars	...	2398	2374	2342	2302	2257	2207	2154	2096	2033
Equations use for first and last equations use for 1 & 2 use		Mercury	...	1260	1278	1288	1293	1291	1284	1271	1255	1234
Equations use for first and last equations use for 1 & 2 use		Jupiter	...	633	650	665	677	685	690	691	690	686
Equations use for first and last equations use for 1 & 2 use		Venus	...	2710	2667	2619	2564	2503	2439	2372	2301	2227
Equations use for first and last equations use for 1 & 2 use		Saturn	...	336	348	358	366	373	378	381	382	380
Equations use for first and last equations use for 1 & 2 use		KARKI	JYA.									

## MARS' MEAN LONGITUDE.

RULE.—To the accumulated Savana days of the given date add 507; the result divided by 687, reject the quotient as revolutions, reducing remainder by the multiplication of 12, 30 and 60 successively and dividing each product by 687, to which result in signs, degrees and minutes add 1 degree and 14ms for correction from observation. The quotient of the Rassa divided by 751, add as Savana day to above; remainder, divided by 24, add quotient as minutes to above result. This is the mean position of Mars. (14)

To accumulated Savana days i. e.,  $49333 + 272 = 49605$  days

Add adjustment 507 brought over at beginning of epoch

Divided by	$\frac{687}{\overline{49464}}$	(72 Rev. elapsed)
	648	

12 Signs

$\frac{7776}{\overline{7557}}$	( 11
--------------------------------	------

219

30 Degrees

$\frac{6570}{\overline{6183}}$	( 9
--------------------------------	-----

Correction for taking the length of revolution as 687 instead of 686 and fraction :

(14) As will be seen on page 33 of Notes that the length of the revolution by taking the divisor as a whole number (687 instead 686 days and fraction) is a little too much and consequently the quotient is found to be less than the real quantity.

This is adjusted by taking one Savana day for every 750 years, and one minute of motion for every 24 years over the rassa and its remainder respectively, which figures are obtained as below :—

According to Suryasiddhanta :—

$$\text{As } 1577917828 \text{ D} : 50112 \text{ D} : : 2296832 \text{ Time of revn. : } x = \frac{2296832 \times 50112}{1577917828} = \\ \frac{115098845184}{1577917828} = 72 \text{ Rev. } 11s \text{ } 9d \text{ } 39\frac{1}{2}m.$$

According to Sandittha without correction :—

$$\text{As } 687 \text{ D} : 50112 \text{ D} : : 1 \text{ Rev} : x = \frac{50112}{687} = 72 \quad 11 \quad 9 \quad 34$$

Making a difference of motion  $0 \quad 0 \quad 0 \quad 5\frac{1}{2}$  in excess for a period

of 135 years, for not taking the fraction into account.

∴ As 135 years =  $5\frac{1}{2}$  minutes.

$x$  number of years =  $31\frac{1}{2}$  minutes (which is equivalent of Mars' daily motion)

$$= \frac{135 \times 125 \times 8}{4 \times 45} = 750 \text{ years to accumulate to one day.}$$

Since 750 years =  $31\frac{1}{2}$ m of motion

$$x \text{ number of years} = 1 \text{ of motion} = \frac{750 \times 4}{125} = 24 \text{ years.}$$

The usual adjustment is not made in this and in the remaining planets for desantara, as the difference is so very small that it cannot perceptibly effect the calculation *viz*: subtractive:

For Mars 2', Mercury 14', Jupiter 0', Venus 5', Saturn 0'.

For every 571 years take it additive by 1 Savana day and every 24 years of this remainder 1 minute of motion = about 5m additive on 135 years.	387 60 Minutes
	<hr/>
	23220 ( 34
	2061
	<hr/>
	2610
To above result	11s    9d    34m
Add correction	0        0        5
Add observed correction	0        1        14
	<hr/>
Mars' mean position	11      10      53
Take Mars' daily motion	0        0        31
	<hr/>
„ mean position	11      10      22
	<hr/>

( *to be continued* )

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## NOTES ON THE HISTORY OF HANTHAWADDY

(continued from the last number)

### PART III.—THE THREE EMPIRES OF HANTHAWADDY.

The date given by Phayre for the close of Teiktha Raza's reign is 781 A.D. But it appears that the reign of Punarika and Teiktha Raza represent a period of strife between Buddhist and Hindu influence which lasted until the conquest of Thaton by Anawrata about 1050 A.D. Thenceforwards governors were appointed from Pagan, the names of three are given in the History of Syriam; but it is probable that only those three were singled out for mention who rebelled against the Burma rule. The last of these, Tarabya, was successful, but he succumbed to Wareru, the Prince of Martaban who ascended the throne in 1287. Here the early History of Hanthawaddy ends, such little knowledge as we possess has to be gathered from numerous sources and supplemented by conjecture; hence it has been necessary to consider it with some degree of fulness. For the later period we are on firmer ground, it is unnecessary to consider it in detail and indeed the material is so ample that it would be impossible to do so. The province of Dala has always been a bone of contention between Burma and Hanthawaddy; any attack upon Pegu by water has first necessitated the conquest of Dala. If the attack was made by land, the invading army usually has left the Irrawaddy at Hlaing and marched across the Northern portion of the present district. Hence the country side is rich in monuments of Burmese history, walled cities and old fortresses and memories of battle. Dala and Syriam have given titles to innumerable princes and their strongholds there have been the occasion of almost as numerous rebellions. Embassies to Ceylon have set out from Dala, and in later days this place and Syriam have been the ports frequented by adventurers from foreign countries. It was at Syriam that the Barnabite fathers initiated missionary effort and much of the hardest fighting in the 1st and 2nd wars took place within the limits of Hanthawaddy District. All that can be attempted therefore is to sketch in outline a few of the salient features of the local history.

The first incident of more than local importance occurred during the Burman governorship. An embassy was sent from Ceylon about 1181 A.C. and as the result of a dispute arising out of this embassy Dala was invaded by the King of Ceylon. There are the remains of an old monument at Letkaik which Forchhammer thought to commemorate this incident. It is Dala also with which the next incident is connected. Narathihapadi, later known as Talok-pyemin, was expelled from his kingdom at Pagan in 1284 and took refuge in Dala, of which Kyawswa, his son and subsequent successor was Governor at the time. This is still remembered in oral traditions. About the same time Tarabya, the Burman Governor of Pegu threw off his allegiance to Burma and called Wareru the Prince of Martaban to his assistance. He succeeded in expelling the Burnans after a series of engagements between Dala and Henzada. He then thought to overcome Wareru by treachery and having persuaded him to disperse his soldiery made an attack upon him. Wareru discovered his design in time to frustrate it and "calling the guardian spirits of earth and air to witness that he was innocent poured out water from a golden bowl in testimony against Tarabya." He mounted his elephant and wounding Tarabya took him prisoner. A few years later when Tarabya again made an attempt upon him he ordered his execution. In the days when they had formed an alliance each had espoused the other's daughter. Now that Tarabya was sentenced to death his wife and daughter of the king pleaded for him, but finding her father resolved to give Tarabya no further opportunity of showing his treachery she mingled her hair with that of her husband so that both their heads might be cut off at the same time. Wareru was informed about her

action but he did not relent. "Cut the head off" he said "and see if she still cares to take it about with her with their tresses intermingled." After the capture of Tarabya Wareru removed the seat of the kingdom to Martaban, and there is little of importance in the history of Hanthawaddy until the grandson of Wareru returned from Martaban in 1354 A. C. The first Epoch of Talaing literature originates with Wareru.

With the reestablishment of a dynasty at Pegu commences the history of the first Peguan Empire. The reign of the first monarch First Peguan Empire, Binya-U was occupied in overcoming the pretensions of the Shans of Martaban, but a succession of able rulers brought about between 1354 and 1551 A. C. the consolidation of Martaban, Hanthawaddy and Bassein in a single empire. The foundations were laid by Binya-Nwe, the son of Binya-U. This prince was appointed by his father ruler of Dagon, and when forced to defend himself against the machinations of his step-mother and half brothers he fortified this town against his father. Binya-U died before open war had been declared and Binya-Nwe succeeded. On coming to the throne he adopted the title of Razadirit. The chronicles of his reign still survive in a volume of over three hundred pages. The foundation of the Danek pagoda is ascribed to him. The town of Hlaing was founded by him as an outpost against the inroads of the Burman while Tabu Myo in the same neighbourhood is evidence still surviving of the rebellion of his eldest son. His civil administration was more enduring than his Military power; he organized the "Thirty-two Provinces of Hanthawaddy" which remained the basis of the administration until the advent of the British.

His death however saw a temporary recrudescence of anarchy; one son the Prince of Syriam rebelled, another the Prince of Dagon followed his brother's example and the Burman army occupied Hlaing in preparation for the subjugation of the kingdom, while the outlying provinces including Dala, passed under their sway. Dhamma Raza, the son of Razadirit succeeded to the throne. His brothers however remained for a time in opposition and it is in connection with the troubles of this time that there comes into prominence Shin Saw Bu one of the greatest characters of Peguan history, who married six husbands and in succession became princess of Dala, Queen of Burma, and in her old age by popular election Empress of Pegu. She was sister to Binya Ran and Dhamma Raza and when the former rebelled and fortified Dagon against his brother she was given in marriage to the King of Burma in return for his alliance. Such was her charm of personality that he crowned her Queen Consort, a position almost if not entirely without precedent in Burman annals. Before however she became Empress of Pegu, there were five rulers in succession to Dhamma Raza and the ordinary accompaniment of war and rebellion in Hlaing, Syriam and Dala. The reign of Binya Waru was an exception, 1426-30. He eschewed warfare, perceiving the damage which had been wrought upon his kingdom, and set himself to the suppression of crime with such effect that even a cat was executed for the murder of a mouse. Shin Saw Bu came to the throne in 1457 A. C. (B. E. 815) but shortly afterwards took up her residence at Dagon where she built a palace the ramparts of which are at present the bunkers on the golf course. The actual work of Government devolved on Dhamma Zedi who had been a monk and who succeeded her in 1464 A. C. (B. E. 822). He was like his predecessor of peaceful inclination and it is probable that many of the "Thirty Seven Pagodas of Angyi" bear witness of the intercourse which existed with Ceylon during the reign of the prince. Shin Saw Bu had extended the glebe islands of the Shwe Dagon Pagoda so far as Danek, but he retrenched them considerably, compensating however for the restriction in area by valuable gifts of gold and gems. The Burman power had now declined beneath the Shan usurpers and the last Peguan monarchs were therefore enabled to carry further the consolidation inaugurated by Razadirit. But the local history of Hanthawaddy becomes of less importance, when the Burmans cease to make their advance by way of Hlaing and Dala.

The rising dynasty of Toungoo is from henceforth the storm centre of the annals and the jungles of Hanthawaddy form a refuge for exiled princes fighting for lost causes. During the reign of Binya Ran there was still peace but the succession of Takarut Bi, his son, a boy of fifteen who gave up his time to hunting and other light amusements was the signal for the onset of Tabin Shweti and in 1540 A. C. the first Peguan Empire was brought to an end by the defeat of Takarut Bi.

With the accession of Tabin Shweti begins the second Peguan Empire under the Toungoo Dynasty. This endured for two hundred years, a rather shorter period than the empire which it replaced.

The second Peguan Empire. So far as Hanthawaddy is concerned, it is with commerce rather than with war that this period is connected. But the former names remain; Dala and Syriam are no longer theatres of war but busy markets where merchants congregate. We hear of "Dala which is a very faire town and hath a faire port into the sea, from whence go many ships to Malacca, Mecca and many other places. It is a very fruitful country." Just beside Dala is "Cirion which is a good town and hath a faire port into the sea whither come many ships from Mecca, Malacca, Sumatra and from divers other places. And there the ships stay and discharge and send up their goods in Paroes to Pegu." There are still wars, however, but they are rather rebellions fermented by the Portuguese against a sovereign power than contests between equal princes. And the defeated subjects are forced to turn to the Portuguese for help. "Valiant and faithful Commander," commences one address to the Portuguese leader by a Talaing prince who has incurred defeat "through the grace of the King of the other end of the world, the strong and mighty Lion with a crown of majesty dreadfully roaring ! in the House of the Sun, I the unhappy Saw Binya, heretofore a prince, but no longer so, finding myself besieged in this wretched and unfortunate city, do give thee to understand by the words pronounced out of my mouth, with an assurance no less faithfull than true that I now render myself the vassal of the great King of Portugal, sovereign lord of me and my children with an acknowledgment of homage and such tribute as he shall at his pleasure impose upon me" This two hundred years is divided into three periods. From 340 until 1509 Burma is yet independent of Pegu; then with the reign of Nyaung Yan Min it becomes subordinate thereto and the Shan Dynasty is driven out. With the conquest of Burma, the hold of the princes is lessened over the south of the country, and the Portuguese are enabled to establish themselves in the person of de Brito-Nga Zinga, as the Burmans still remember him, as masters of the lower province including Toungoo which they ruled from Syriam. The Burmans and Peguans drive them out and Nga Zinga is executed, but these foreign adventures have proved themselves dangerous neighbours and to this in all probability may be assigned the removal of the Head Quarters of the Kingdom from Pegu to Ava under Tha Lun Min in 1635. Henceforth until 1740 Ava remains the capital although Pegu is the more important member of the empire. During this period Syriam is the chief city of the southern province. The writings of the early adventurers of these times are full of references to Hanthawaddy (Ansudei or Ansedea) and various places and passages therein, but it is impossible to trace them out in detail.

It does not appear that any information is likely to be made available concerning the internal administration of the First Peguan Empire beyond the fact already mentioned that Hanthawaddy was then organised into Thirty Two Provinces. During the Internal Administration. Second Empire some detail is possible. The prominence of Syriam as a port resulting from the arrival of adventurers from Europe induced Sinbyumya Shin, Branginoco, to appoint a Governor to that town. His duties were to "settle the assessment and levy of revenues among the towns and villages in due proportion so as to provide for the officials." Fish, cocoanut, sugar and plantains are mentioned among the contributions and there is a special allusion

to "the royal tribute of betel from the Dala gardens," which had to be brought into the betel treasury at Syriam. At the same time Syriam was appointed as a watch post and the people of the locality had to contribute in kind and service to the maintenance of three war boats.

When sixty years later Tha Lun Min removed the Court from Pegu to Ava the importance of Syriam waxed as that of Pegu waned. The Akunwun was transferred from Pegu to Syriam and in addition to his former duties was charged with taking toll from ships arriving there. The reforms of Tha Lun Min form a well known but little studied epoch in the administration both of the upper and the lower provinces. The revenue enquiry held by him in the year 1000 B. E. was a model to the better known enquiries of 1145 and 1164 B. E. In Syriam he appointed officials for the receipt of custom. The other revenues he distributed under 12 heads, which had to be provided by the five districts of the Karens and the people of all the towns and villages of Hanthawaddy. The twelve kinds of revenue comprised a toll of gold, a toll of silver pieces, a toll of rope, tolls of the two varieties of cane, a toll of wood oil, a toll of madder, a toll of powder, a toll of paddy, a toll of chillies, a toll of salt and a toll of salt fish.

The Akunwun was charged with keeping record of the revenue and of paying it into the Royal Treasury. The Clerks of the Akunwun had to keep account of the revenue collected both in detail and in abstract, and to make over the lists for the High Clerks of the Royal Court. He organised in fact both fiscal machinery and an accounts department. It is known that manuscripts are in existence which describe in greater detail the reforms of Tha Lun Min but they have not at present been translated.

The Third Peguan empire. The third Peguan Empire was but a passing phase; it consisted of the temporary restoration of the local power of Pegu. It receives an added interest in being the occasion of the introduction of Christian Missionary effort. It was impossible permanently to rule a rich and distant province from a remote and com-

The Barnabite Fathers. paratively barbarous centre, and as the royal line grew weaker the Talaings found an opportunity for asserting themselves. Their attempts to cast off the Burman yoke succeeded in 1740 A. C. and in 1751 they again subjugated the Burman kingdom. The Barnabite fathers landed in Syriam in 1721 A. C. and after the restoration of a dynasty in Pegu in 1740 prospered to such an extent that in 1750 they were enabled to build a large brick church of which the remains still exist. With the arrival of the Burmans, however, they were suspected of entering into correspondence with the French on behalf of the Talaings and the Bishop was executed. The mission in Syriam ceased to exist in 1760 the year after the Bishop's death.

Internal Adminis- tration. Between the removal of the Peguan Court to Ava in 1632 and the Burman conquest of Pegu in 1757 there are incidental references to administrative methods, but it is at present impossible to assign

these even approximately to their proper dates. It seems that except such obvious items as the commission on brokerage and money-changing the greater part of the revenue continued to consist of payments in services and kind. The people of Syriam had to provide the Governor's guard, the boat caulkers had to give their services when required but in some cases the connection between service and occupation seems remote. Thus in Syriam at least the burden of providing oil torches at festivals was laid upon the washermen and barbers, the brokers and money changers had to provide the wood oil, while the people of the boat building quarter had to carry the torches when made. Rights of jurisdiction were held on condition of rendering naval or military service. Besides the regular revenues aids were levied at the yearly festivals and on the accession of a monarch, but these would be remitted in the poorer localities, such as a township which was recruiting after a period of pestilence or war.

## TALAING FOLKLORE

(continued.)

### XIII.—THE STORY OF THE KING WITH TWO QUEENS.

Long ago there was a king with two queens the elder of whom had four sons. When the younger queen was about to have a child the astrologers were called in and they said: "As for this son of the king, should the king look on him before he is twelve years of age, the king's eyes will be blind."

Then the king said: "Doctors, how may this evil be avoided?"

"Let a hole be dug in the earth and let the child be placed in it and let him be taken out when he has reached twelve years."

So they dug a hole and the boy was born there and remained till he reached twelve years of age. Then he asked his mother, "Where are our parents? Where is our house? Where are our relations?" When his mother had told him all that had happened, he climbed out of the well and she could not stay him, for he said, "How can the king's eyes become blind?" So when he had climbed out he went to the town. Men chased and tried to stop him but he went up to the house of the king and when the king saw him the king's eyes lost their sight. So the people drove him out of the town.

He wandered away at haphazard and reached in a certain village the house of an old man and an old woman who had an unmarried daughter. This girl spent all her time playing cowries and nobody could win against her. Then the prince questioned the old man and the old woman about her, saying, "How is it that she always wins?" And they said, "Hai, will you defeat her? She takes with her a cat and on the cat's head she seats a lamp and when she throws the shells the cat looks sidelong at them and they turn over." Having learnt this the prince went to the bazaar and bought a squirrel and put it in the pocket of his coat and taught it to jump out when he snapped his finger. When he had trained it he went and played cowries with the girl. As the shells were thrown he snapped his fingers, the squirrel jumped out of his pocket, the cat saw the squirrel and ran away in a fright and the lamp was broken in pieces. So the prince won and thus he won many times. At the last the girl being at the end of her resources staked herself and played: the prince snapped his finger, the squirrel jumped out, the cat ran away and the lamp was broken. The prince won and the girl herself and her house became his and they lived together in it. After some time the prince said to his wife, "My father has lost his sight. I am going to gather the Glaik blossom from the garden of the Takohs yonder."

"O master of the house, do not go. The takohs will devour you and you will not get the flower. The defences of that garden are one line of ants, one line of rats, one line of curly-tailed scorpions, one line of many-legged scorpions and one line of snakes. And outside takohs are on guard unceasingly."

"Fear not," he said "I will go and get the flower." Then he told his wife a story. "Long ago a man went to the forest and found a tiger caught in a trap. 'Set me free,' the tiger called to him, 'O lord of benefits.'

'If I set you free, am I safe from you. Will you eat me?'

'I will not eat you. Do but set me free.'

So the man went and released the tiger and the tiger said, 'I have long been without food and now I am going to eat you.'

'It is not fit that you should eat the man who set you free. But let us go and hear the judgment of the Dewatao of the tree in the middle of the clearing ... O Dewatao, I set the tiger free. Is it fit or not that he should eat me?'

And the Dewatao of the tree replied, 'Lo, men come and go and rest under my shade. My branches they break and sit upon them. Therefore,' said the Dewatao of the tree 'it is fit that the tiger eat thee.'

Then the tiger said, 'Now, I am going to eat you.' But the man said, 'Nay, we will go to the Dewatao of the Bridge...Oh Dewatao, the tiger was caught in a trap and I set him free. Is it fit or not that he should eat me?' And the Dewatao of the Bridge replied, 'Lo, men cross over upon me and some use me for unworthy purposes. Therefore,' said the Dewatao of the Bridge, 'it is fit that the tiger eat thee.'

'Now,' said the tiger, 'I am going to eat you.'

'Wait yet a little,' said the man. 'When you have the third judgment in your favour, eat me.' So they went and came to a squirrel and the squirrel when he saw the man fled. The man followed shouting, 'Wait, be our instructor and decide our case.' Hearing his, the squirrel stopped and said, 'Don't you come near. Speak to me from a distance.' Then the man told the circumstances of the case and the squirrel said, 'I myself did not see these things happen. I cannot decide. Show me the place where the tiger was caught. Let us go and see... But how shall we go? I do not trust you two. Let the tiger go first, the man next and I will follow.' When they came to the trap the squirrel asked, 'How was the tiger placed? Show me, tiger-beast—Get into the trap—how you were bound, how you were released...Have you tied him fast? Now tiger can you move?' 'Hardly at all,' said the tiger. 'O man, is he tied fast?' 'As fast as can be,' said the man. 'Tiger,' said the squirrel, 'you have no conscience. Let the man go as he came. I will go as I came. Let the tiger remain in the trap. Thus I give judgment.'

"Thus is the old tale told, and so my mind is fixed to go and gather the Glaik flower." His wife now approved and he went. On the outskirts of the garden he met a takoh. Straightway he ran forward and clasped the legs of the takoh and cried, "Eat me, eat me." Then said the takoh, "I will not." "Eat me, eat me," he cried again. "May the thunder strike me if I do," said the takoh. Then the prince unclasped the takoh's legs and remained with him. When the takoh went to catch men they always ran away but buffalos and oxen he caught and ate alive. When the prince saw this, "It is not good to eat like this," he said.

"Then how should one eat?"

"Go and get firewood." So the prince cut open the ox and removed the undesirable parts and washed it and put in onions and chillies. When it was nearly cooked he took it off the fire and scraped off the soot and gave it to the takoh to eat. The smell and savour delighted the takoh, so that he ate nearly the whole of an ox. When he had eaten he praised the prince. Afterwards the takoh hunted men no more but only cattle, which were cooked in this manner every day. And because the savour was so pleasing he took two or three carcases as a present to the great aunt takoh. When she had eaten and found the taste to be surpassing she called the takoh who had brought her the food and said, "Such food have I never eaten. How gave you it its flavour?" Then said the young takoh, "It is not my doing. One of the sons of men showed me how to cook flesh and I brought some for my aunt."

"How old is he?"

"A little over sixteen."

When she heard this she loved the prince as the son of her bosom and bade the young takoh summon him to her presence, saying, "I will marry him to my own unmarried daughter." So the prince became the husband of the takoh's daughter.

Now in the capital the four sons of the elder queen set out to search for the Glaik flower to rub on the eyes of the king. In their travels they came to the house of the girl who played cowries. They played and lost and in the end staked themselves. They lost again and became her slaves.

One day the young prince who was married to the takoh's daughter called before him the rats who were warders of the garden and said, "O rats, do me a benefit. In one night burrow me a passage from the stairs of my house to the flower garden." But the rats said, "We dare not." Then he said to his wife "I want to go and play in the flower garden." And she went and made supplication to the old takoh her mother and her mother called a young takoh and said, "Carry this youth into the flower garden and let him suffer no scathe. If as much as a finger nail is injured you shall die." The prince took with him a small spear. The young takoh showed him all the other flowers but the Glaik flower he did not show. When the prince said, "Show me the Glaik flower," he replied, "I dare not." "Then I will stab you in the stomach," said the prince. At this, fearing lest the prince should be injured, the takoh bore him to the garden of the Glaik flower and the prince plucked a blossom and stuck it in his headdress and they returned.

After some time the prince said to his wife, "I wish to return to the town of my mother and the land of my father" and his wife went and made supplication to the old takoh. When she had listened to her daughter's words she said, "It is well, my children," and she plucked seven hairs from her head and said, "Look you, my children, in case of war or any other important matter, burn this hair and think of me and I will haste to you." Taking then the hairs the two, man and wife, came away and set out on their journey and reached the house of the girl who played cowries. She cried out, "My husband has come back," and the old people cried, "Our son-in-law has come back," and they all welcomed him joyously. Then the prince saw his elder brothers in the position of slaves in the house and whispered to his wife, "Your slaves are princes and my brothers Let them go." But she said, "On what terms can I let them go? Will they all agree to be branded on the buttock with the stamp of this ring?" They agreed and they were branded and let go. Then they went to the bazaar to buy the Glaik blossom and when they came back, the young prince asked them, "What mean you to do with this flower?" They said, "We will rub it on our father's eyes." "Will it cure his blindness?" "Surely," they said, "this is the flower that cures blindness." "A blind man lives yonder. Go and rub his eyes." They did so but his blindness remained. Then the young prince touched the blind man's eyes with his flower and his eyes became whole. After this the elder princes followed him everywhere with blandishments. His wife warned him, saying, "Do not go with them. They are plotting to take the Glaik flower from you." But he said, "It is no matter." One day they enticed him to a well and pushed him in and they hooked up his headdress with a long rod and took the flower and threw the rod in the well again. Then the four princes went to the capital and rubbed their father's eyes with the Glaik flower, so that he saw.

The young prince climbed out of the well and went home and his wife, seeing him, said, "Where is your headdress?" and he said, "They have taken it from me." "I told you not to go near them but you would not listen to me." "It is no matter," he said, "they will not benefit. We shall." Then they went to the old man and woman and asked permission to go to the capital. Having received permission, they made them presents and the prince with his wives went to the town of his mother and the land of his father. At one day's distance from the capital the prince said, "I wish to found a town at this place" and after consulting his wives, he burned the hair of the takoh. She came at once and the prince said, "I wish to found a town here in a single night and let there be roads of silver and gold reaching to the palace of the king my father. And let there be halls at intervals where men may have food and drink. Let there be plates of gold, cups of gold and trays of gold." All this the takoh performed and at the head of the road near the palace, she set a writing and returned to her own place. Next day the people told the ministers of the marvel and the ministers informed the king and when they saw the writing they carried it to the king. The king said, "This is no other than my son the

prince. As his power is so great, it is fitting that we go to him in an appropriate manner. "Then the king and the ministers and the four princes went together to the city of the young prince. When they had gone half the distance, attendants came and gave them food and drink. And any who wished for a gold plate might have it and he who desired a silver plate received it according to the order of the young prince. When the king heard this he collected all the plates and went into the prince's town, and with the four elder princes he sat on a dais. Presently the elder wife of the young prince came in as her husband had privily instructed her, and did obeisance to the king. But he said, "Why are you in such a hurry to come in? I have not yet had my fill of looking at your city."

"May it please your majesty, I find my four slaves sitting together with your majesty."

"Heh, these are my sons. How can they be your slaves?"

"May it please your majesty, I have branded them on the buttock. Let them show the brand."

Then the king looked at the brand and compared it with the ring and said, "It is true," whereupon the four princes ran away. Then the young prince went to his father and told him all that had happened. The king made over the palace to the prince and the prince became king in the place of his father from that day.

NOTE. The story told by the prince to his wife is the well known ရွှေသနမြို့၏ များက္ခာ။ The point of it here seems to be that his wife should mind her own business and let him mind his. Otherwise, I have not yet heard of any origins or parallels for the strange incidents of this tale. It seems an old story, partly forgotten, into which alien matters have been imported. Thus the prince has no adventure with the snakes, &c., guarding the Glaik flower. They are really hardly necessary to this story.

J. A. STEWART.

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## BURMESE GHOST STORIES

(continued)

### III.—THE WRESTLING-GHOST.

(adapted from the *Tajjattha-dipani kyan*).

Not far from Khin-mon in the village of Chaung-u there lived a man, Nga Aung Htoon with his wife, Mi Ye. The people of that district were great gamesters and sportsmen and took equal delight in gambling and cock-fighting as in buffalo-fighting and horse-racing; but their favourite pastime was wrestling. Even phongyi enjoyed it and kings favoured it. A clever exponent of the game always obtained a seat in the temple of fame.

Nga Aung Htoon was a lazy man, too dull to succeed in business and too proud to beg for his food. His physical endowments were far more respectable than his mental equipments. So after some vicissitudes in life he eventually found himself a professional wrestler and became well-known as a clever champion. He fed himself and his wife with doves and partridges, for he was also a cunning fowler. One day in March after a good breakfast he went out to a forest on the west to catch birds. It was a day of clouds and thunders and lightning flashes gave unmistakeable signs of the approaching storm. Already by three o'clock in the afternoon, the rain had poured down in such profusion that the fowler with all his pluck and readiness of resource found it impracticable to return home. So he was glad to take shelter in an old phongyi-kyaung, first hanging up his cage on a door-post. The phongyi of this kyaung had been a champion wrestler, who by his feats of strength had amassed a considerable sum of money, buried under the steps of the kyaung. Owing to his intense attachment to this treasure he was punished by being reborn as an Ottazaung, watching over it. He was not an Ottazaung of the ordinary type—a mild and handsome creature, in whom gentleness of behaviour and comeliness of features are the predominating traits,—but was a most fierce being with the brawling rowdiness, the dashing courage and the fiery temper of the wrestler that he once was. It happened that at dusk when the rains stopped, the ghost, disguised as a phongyi, entered the kyaung reciting some Pali verses in the style of a saint lost in meditation and with the monotonous sound of his slippers striking—*rap, rap, rap*,—against the floor. When Nga Aung Htoon became aware of this, he was not a little surprised; for he had thought the kyaung to be deserted. But it was not the time for doubts; reverence to the holy man must be paid first. So down on his knees he went with the agility of an athlete and up to his forehead flew his hands with the practised ease of a devout Buddhist. Thus the phongyi let Nga Aung Htoon crouch down and make him obeisance until he saw the cage when suddenly he felt a thrill of wild excitement pass through his marrow and all the gambling and sporting instincts of his previous existence came back to him in all their intensity. He asked, "Man, say who and what you are." "I am, Most Venerable Sir! Nga Aung Htoon. Suffer thy disciple to pass just one night in this kyaung." "Aye, on one condition only I suffer thee. Prepare thee for a wrestling match with me." Nothing could have pleased Nga Aung Htoon better. It was like letting a captive fish go into the water. So he tucked up his *longyi*, and in sheer joy clapped his hands on his arms (by folding the arms in front and striking the palm of the right hand on the left arm and the palm of the left hand on the right arm in quick succession) producing sounds as from a bamboo clapper and sprang forward and wrestled with his opponent. Hard blows were given and taken on both sides and many feats of

strength and agility were performed. Both the combatants displayed equal skill and it was hard to judge who would win. But Nga Aung Htoon soon noticed that whenever he succeeded in delivering his most effective strokes he felt as if he were giving blows to a bag of cotton and that he was quite powerless to hurt his opponent. He then began to doubt the personality of the phongyi and as this doubt increased, his courage became less and he began to lose ground. He perspired profusely and in despair made one wild attempt to seize him by the hair. He succeeded in grasping what turned out to be a cap\* on the ghost's head. This marked the turning-point in the combat, for immediately Nga Aung Htoon found, much to his relief, that the ghost became weaker and weaker and began to yield his ground. Thereupon he pressed hard upon him and dealt him such blows that the ghost was well-nigh fainting and could just plead in piteous tones for his cap. When Nga Aung Htoon refused, he reiterated the request saying, "The cap will not be of use to you, a layman. What benefit will you get from it? But to us, O. it is everything; it is our all in all. O! do give it me back." This strange cap was in shape like one of the halves of a big citron fruit cut in two; in colour it was like the skin of a land lizard. When the ghost saw that Nga Aung Htoon was decided in his refusal, he offered him a large sum of money in exchange for the cap. This was too tempting for the money-loving fowler. Accordingly the agreement was made and man and ghost together descended the north steps of the kyaung, where Nga Aung Htoon began digging the ground with a knife. As the rains had made it quite soft, he had no difficulty in digging it to a depth of a couple of cubits in a very short time, when lo! to his astonishment three viss of pure silver in a jar! He took these and gave the cap back to the ghost, who disappeared. For the rest of the night Nga Aung Htoon was too excited to sleep but nothing further disturbed him. Early the following morning he shouldered his cage and treasure and returned to his village. When he got home he was met by the abusive language of his wife, who thought that he had been misbehaving himself the whole night. She, however, became quite calm in manners and endearing in speech, when to her astonished gaze he opened out his treasure. Thence-forward husband and wife led a peaceful life and performed many acts of charity.

Not far from their house lived Mi Ye's sister, Mi Ya and her husband Nga Pyaw. When Mi Ya heard all the details of her brother-in-law's adventure, she thought it a very simple matter for a man of any pluck to get three viss of silver. So she desired her husband to turn fowler and play the part played by his brother the evening before. But Nga Pyaw, true to his name, was quite a different man. He was very timid and altogether a weak creature both mentally and physically. He made excuses. Did he ever wrestle or ensnare birds? But it was of no avail. Go he must or he must lose his wife's love. So with many a trembling in his body and many a foreboding in his mind, he set out with his brother's cage in the direction of the dreaded kyaung, where having duly arrived he anxiously awaited the mysterious phongyi. Nor was he disappointed; for at dusk the phongyi appeared and asked the same questions as on the previous occasion. "Whose cage is this?" Nga Pyaw was in such a state that all he could do was to stammer out (his knees knocking against each other and keeping time with his words) "It...is...mine." "Then prepare thyself for a wrestling match with me." To this Nga Pyaw was obliged to agree with fear and reluctance. But the ghost had learnt a lesson from Nga Aung Htoon and called in the aid of his novice, also a ghost; and they hard beset Nga Pyaw. Moreover, the ghost took especial care of his cap, so that, bad wrestler that he was, Nga Pyaw had not the shadow of a chance to grasp it. But he was kicked and buffeted on all sides by master and novice until he could stand it no longer and took to his heels. The ghosts in the intensity of

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\* This was not an ordinary cap but was endowed with magical powers and could make the wearer visible or invisible as he liked.

their vengeance chased him and would have caught him had not his extreme terror of his pursuers, whose breath he could actually feel beating on his back, gave supernatural strength to his legs, which went faster than those of the ghosts. Only when he entered the village the ghosts gave up the chase and left Nga Pyaw half-dead at the door of his house. So people said that instead of treasure Nga Pyaw got the ghosts' kicks and the wife's curses and the brother's reprimand for leaving his cage behind at the kyaung. The poor fellow never recovered from his fright and died soon after.

#### IV.—THE MISTAKEN OTTAZAUNG.

(adapted from the *Kavindaravudhamanajusa kyan*).

There lived a cultivator, named Nga Nu. He was an industrious man and it was his regular habit to get up every morning with the first blush of dawn and at the first cock-crow and work in the field. One morning it happened that as he was ploughing there came up a young maiden, decorated with all manner of radiant gems and beautiful as precious gold, replete with every constituent of being and endowed with the five requisites of beauty. She had a winsome face and a fascinating gait and stood by his side on the plough. She did not enter into conversation and disappeared before she could be detected by any of the people who might be passing by that way. She came again the second morning, again on the third and on the fourth till she became quite friendly with the cultivator. When he let his friends into the secret, they rebuked him, saying "O you son of folly, kinsman of the canine tribe! How you are letting this chance pass! Know for a certainty that when you see in field or forest, at dawn or eventide, a pretty maiden without any companion, richly decked with necklaces, radiating with shining ear-rings and wearing an exquisite dress, she is none other than an Ottazaung, whom you must belabour with the mighty stick in your hand, if you desire to possess her treasure of gold and silver, which will last for a life-time." Nga Nu being a simpleton thanked them for their advice, which he laid well to heart. Punctually at the first cock-crow early in the following morning he was in the field awaiting his mysterious love. It chanced that at that early hour before her parents had time to wake up, a rich young maiden of the village, decorated with all decorations was passing along to meet her lover and overcome with anxiety and fatigue sat down to rest awhile near Nga Nu's field. The cultivator took her for the Ottazaung and without making any enquiries but impelled by an excessive greed for wealth and zeal to put his friends' advice into execution rushed upon her and overwhelmed her with the quick strokes of his driving-stick, accompanied by such triumphant exclamations as these, "Are you not a lump of gold?—enough to feed the whole circle of one's relations! Eh! Now only I have got you. Know me then for a man of furious zeal." The poor girl thus unexpectedly set upon was near death with fright and thinking that she had fallen into the clutches of a dacoit craved for mercy. But this only made Nga Nu's stick fall on her back with accelerated velocity, so that mad with pain, her whole body covered with blue stripes she tried to escape by running away towards the village and shouting at the top of her voice and imploring the gods to save her. Her cries woke up the whole village and the villagers caught Nga Nu and took him to the Head villager for judgment. To all the charges of the maiden, Nga Nu pleaded guilty and under the mock-serious circumstances of the outrage was fined thirty rupees.



## NOTES AND REVIEWS

### ETYMOLOGICAL NOTES

#### I. *Talaing.*

We are all much indebted to Mr. W. G. Cooper for his recent paper giving us new and interesting information on this subject. He has done good service in drawing attention to the Mon works from which he has quoted, and we may hope that he will extract still further information from such records and in due time will edit and translate some of them. His local enquiries have also elicited some curious facts and testify to the trouble he has taken to get at the bottom of this complex matter. But some of the propositions and conclusions he advances require critical consideration before they can be accepted as proved.

It is interesting to learn, what one does not remember to have seen stated before, that the Mons do use the term "Talaing" but apply it to a particular and somewhat despised class amongst themselves. As that is the case and the name is objectionable to them, one can only agree with Mr. Cooper that in future the proper term "Mon" should be used when speaking or writing of this nation as a whole or of their language, customs, etc. But that does not conclude the whole matter. We have it on record that more than eight centuries ago the Burmese had already begun to use the name *၏ၢၢၤ* (*Tantuin*) for the Mon people in general. Any suggested etymology of the name must be consistent with that fundamental fact, which is all that (at present) we have got to start with.

Now the origin of national names, whether they be such as nations apply to themselves or as other neighbouring peoples apply to them, is generally very obscure. It is, as a rule, "lost in the mist of ages," for they are usually very old names indeed. Further, it is difficult to get any clues to the etymology of such names, because they often appear to be quite isolated and as if standing unconnected with other words. Nevertheless, and perhaps even more than other words, they have always had a kind of fascination for the etymologist, both scientific and popular; and nearly every nation under the sun has attempted to account for its national name and at the same time has had to put up with the interpretations put upon it by sometimes uncomplimentary neighbours. The results, however, have as a rule been only more or less plausible guesses. Even scientific etymologists have often had to confess themselves baffled by these names. It would serve no useful purpose to give a string of instances in support of these familiar facts. But I take it that no one nowadays believes, for example, that the Britons owed their name to a mythical Brutus invented *ad hoc* by mediæval chroniclers.

I am afraid the traditional derivation of "Talaing" quoted by Mr. Cooper must take its place in this category. It bears upon its face the characteristic marks of what is called "popular etymology." Its very wording proclaims it to be an attempt to combine in one narrative two current explanations of the name, the one which would attach it to Telinga (Talingu, Telugu) and the other which would derive it from the word *ဘား*, which I prefer to transliterate "*ita luim*," meaning "father" and "destroyed," respectively. It is plain that these were competing theories within the knowledge of the author of whichever may have been the older of the two books quoted, and that he tried to bring both views into his account of the matter.\* Further, we have no real evidence as to when he

\* A speaker who took part in the discussion of Mr. Cooper's paper appears also to have tried "to have it both ways". It really can't be done.

wrote, and certainly nothing to make us believe that he represents a tradition that can be assumed to go back uncorrupted to a period prior to the date of the early Burmese inscription in which the name *Tanluin* first occurs. His account, therefore, though of considerable interest from the point of view of folk-lore, as adding yet another item to the long list of popular etymologies, cannot claim to be weighed against the definite evidence of the inscription.

The same is obviously true of the views of the venerable monks consulted by Mr. Cooper on the point. While in matters of Buddhist ritual, custom, or doctrine their opinions would be entitled to the most respectful hearing, it is obvious that on a question of etymology they are worth nothing whatever. The utmost that could be properly inferred from them, and I am not sure that even that is quite certain, is that side by side with the tradition embedded in Mon MSS. a similar tradition has been handed down, from some unknown date, by word of mouth and still survives in the memory of certain persons at the present day. There is no certainty that it has been handed down quite independently of the version enshrined in the MSS., and in any case the existence of such traditional stories is no evidence at all that the derivations they support are true. One must not overlook the common phenomenon of the invention of such popular tales for the purpose of explaining words whose real origin and meaning have been obscured by lapse of time.

Why should the Burmese have applied to the whole Mon race a name which was properly applicable only to a particular class in a particular district? They must have had a name for the Mons long before they conquered them and thus came into actual contact with that particular class, even assuming its separate existence at that remote period. Taking the Mon chronicler's explanation of the term "Talaing" as I find it I read in it merely an attempt, made long after Anawrat'a's time, to shift on to the shoulders of a despised class the burden of a name which was unpopular because used by a foreign conqueror. Inference for inference, that interpretation is *prima facie* as good as any other. It has also what is in our present state of ignorance perhaps a further advantage, in that it does not pretend to account for the origin of the name itself. On that point I can profess no definite opinion of a positive kind. But I am convinced that *Tanluin* (which is the form we have to account for, if we undertake to suggest an etymology for "Talaing") cannot by any of the ordinary principles of Mon word-change be derived from *ita luim*, or rather from the old forms of these two words in the period preceding 1100 A. D. As to what these were, the inscriptions will perhaps some day tell us so far as *ita* is concerned, *luim* was written *rlim* about this time,\* and I think I have also seen it spelt *rlum*. We are entitled to ask Mr. Cooper, if he wishes us to accept the derivation he quotes and appears to endorse, to give us some corroborative evidence in support of the phonetic changes it involves. It may be true, as stated in the discussion, that philologists are equal to any occasion. But in these latter days they have learnt to be critical, at any rate of one another's methods and conclusions. And before we feel bound to admit that at some date prior to 1100 A. D. two Mon words which were probably sounded something like *ita r̥lōm* were adopted into Burmese under the form *Tanluin* (perhaps pronounced *Tanlōn*), we want to have parallel instances of the change of *r* to *n* and *i* to *m*, either within the Mon language itself or as between it and Burmese.

I will not dwell upon the somewhat fanciful nature of the narrative itself, nor upon the fact that the interpretation put by it upon the words *ita luim* is, after all, rather a strained one. I would merely say that the derivation is *per se* decidedly improbable and is not proved by the evidence adduced.

Finally, we do not even yet know whether the name is of Mon origin at all, nor whether it consists of one word or of two. If it is a Mon word, its

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\* In an inscription at the Shwesandaw pagoda, Prome.

form suggests that it was built up with the frequently occurring ancient infix *in* (very commonly written *an*) from some stem *tluin*. Such a stem might be purely native, or it might represent Telinga. I do not intend to suggest that either of these alternatives is really the origin of the word: but at least they are more in accordance with the ascertained rules of Mon word-formation in the oldest known period of the language than the *ita luim* derivation. It is by no means impossible that "Talaing" should represent Telinga. From some remarks made in the discussion of the paper it appears that there is still a certain amount of confusion in the minds of some people about the relations of the Mons with Indian races. So far as any genuine relationship is concerned, there is only the distant though very real linguistic connexion with the uncivilized Munda tribes of the interior of India and with the Khasis in Assam. That connexion must go back to very ancient times, before the Mons arrived in Lower Burma, and there can have been no subsequent intercourse between them and these other races. There is no reason whatever to doubt that the Mons came overland, nor is there any ground for supposing that any of these other races ever crossed the sea at all. In the case of the Telugus the matter is quite different. There is no trace of common origin, racial or linguistic, between them and the Mons, but there are very strong reasons for believing that the Mons in a great measure owe their civilization to direct intercourse with Indian traders, priests, etc. who came across the sea from that part of the East coast of India where the Telugu language now prevails.

## II. *Mon and Ramaññadesa.*

I now come to the real national name of the Mon people. I believe that at the present day it is usually spelt မုန် (Mon), but in writings of comparatively recent date, such as the Pegu chronicles (Rajawan) edited by Schmidt, the form မဏ် (Man)\* is to be found (e.g. op. cit., C IV 1), and Haswell gives both ရမဏ်. Apparently this *Man* is really the older form, for as we pursue the name further back into mediæval records we find it written ရဏ် (Rman). The *r* which here appears before the initial of the root seems to have been a prefix of some kind. At any rate it occurs in other words (of which I have given one already in discussing the origin of *Talaing*, and may now add *rmin*, modern ရီမိန်, "to hear"); and in modern Mon this prefix is as a rule dropped. The form *Rman*, which occurs repeatedly in the Kalyāni inscription of Pegu (late 15th century A. D.), must have been pronounced with some short indeterminate vowel between the *R* and the *m*. It is quite usual in the early Mon inscriptions to find two or even three consonants piled up together at the beginning of a word in such a way that they could not possibly have been pronounced as they stand. One must supply a short vowel, for which the Mon alphabet neither found a symbol in its Indian prototype nor troubled to invent one. Therefore we may take it that *Rman* was pronounced something like *Rēmān* with the vowel of the first syllable pretty much like the final *a* in the English word "Africa," and with the stress on the last syllable.

In the Kalyāni inscription the Mon version always speaks of *rah Rman* when the Pali version has *Ramaññadesa*, the meaning in both cases being "the Mon country" as constituted at that time, including the three provinces of Bassein, Pegu and Martaban. From this it plainly follows that the theory mentioned in a note on p. 3 of Vol. III, Part I, of this Journal, that *Mon* is derived from *Brahmin* or *Brahma*, is entirely untenable.<sup>†</sup> For it is evident from

\* Of course this is merely a *literal* transcription: I am not concerned with the modern pronunciation of the word but with its past history.

<sup>†</sup> It is curious that the Burmese set up a similar, and equally unfounded, claim with reference to the origin of their national names.

what has been said that *Mon* and *Rāmañña-* are one and the same word, the latter being merely a scholarly form artificially coined for use in a Pali context and based upon an older phase of the former, which was the genuine native ethnic name.

But why, it may be asked, should the form selected for scholarly purposes have been *Rāmañña-* and not (for example) *Ramana-*? With regard to the quantity of the first syllable, it may be replied that scholars in constructing a "classical" form of a local name do not always consider themselves tied down by strict phonetic principles: other ideas come into play, and it may well be that the familiar Indian proper name *Rāma* and other derivatives from the same root (which in Sanskrit have pleasing associations) were present in the mind of the first inventor of the term *Rāmaññadesa*. The use of a palatal instead of a dental nasal cannot, however, be explained in that way. But I think it can be accounted for by the following considerations. In the 11th century inscriptions many Mon words end in *ñ*, but in the 15th century that final had become obsolete and in the great majority of cases changed into *n*. *Rāmañña-* may have been invented during the period when *ñ* was still in use as a final in the Mon language and the ethnic name at that time may have been *Rmañ*. On the principles of Pali spelling and word-structure the *ñ* had to be doubled and an *a* added on. Hence the form as we find it in the name *Rāmaññadesa*.

It may be objected that this is all very conjectural, and so it is, but there is some slight corroborative evidence. In an 11th century inscription, much battered and weathered, I believe I can decipher a still earlier form than *Rmañ*, viz. *Rmeñ*, and if this should eventually be confirmed it will suffice to prove the existence of *Rmañ*. For such a form will be an inevitable intermediate between *Rnieñ* and *Rman*, and some actual cases of a like change can be given, e.g. the successive forms *sreñ*, *srañ*, and *sran*, "silver." It would also appear to follow from this evidence, if we are entitled to rely upon it, that the form *Ramañña-* dates from the period between the 11th and 15th centuries.

That the old feeling that the final *n* in *Mon* was originally an *ñ* still lingered on to a much later date, would seem to be indicated by the form *Maña-bhasa*, "the Mon language," which occurs in Schmidt's *Rajawan* (A II 2); and even at the present day the spelling *Mañ*, for *Man*, is occasionally used, e.g. in the title of an elementary schoolbook published as recently as 1898 and mentioned on p. 105 of Vol. III, Part II, of this Journal.

What the original meaning of the word may have been, I am in no position to suggest. I doubt if it will ever be possible to determine it with certainty. Somewhere or other I have seen a statement that some Mons explain their national name as meaning "first," in the sense that they are the first of mankind, whether from the point of view of antiquity or of superiority I do not happen to recollect. Nor do I remember how the derivation was arrived at, whether they attempted to connect it with their word for "one" or with some other word. Anyhow, it is fairly safe to put all such suggestions on one side as being highly improbable in themselves and utterly unsupported by anything that can fairly be called evidence. When one does not know the original meaning of a word, it is best to admit the fact. That at any rate leaves the way open for further enquiry, instead of blocking it by a purely fanciful explanation.

C. O. BLAGDEN.

(*To be continued.*)

## THE ORIGIN OF THE AHOMS (1)

In the Journal of the RAS, for April, 1913, there is an article by Colonel Gurdon on "The Origin of the Ahoms." It tells of a "metal plaque." On one face were the words "Letters patent . . . A.D. 1408," on one side "Be faithful," and the place is given as "Timasa" (which you say is identified as Chieng-Mai). There are two things in particular which are puzzling: the place and the date. In passing, I may say that a similar "plaque" was sent by the Emperor to a king of "Nanchao" marked "Nanchao, 705-805." So while the place is the place to which the plaque was sent, the date was not necessarily the date of issue.

Now, coming to your "Timasa." Nan-chao, even while still practically independent in local affairs, certainly acknowledged the Emperor as over-lord. He also received a plaque of this kind. Now, during the time mentioned above there was a sub-kingdom down on the Cambodia River northward including at least the Hsiphsawng-Panna, and southward extending probably to Ving-Chang. Ving-Chang or Kieng Tsen may have been its capital. Westward, it included at times what was at other times a part of the "Province of Chieng-Mai." During the same time as mentioned above, a Nan-chao king sent down to the sub-kingdom on the Cambodia two of his nephews to take over charge in his name. They took with them, among other things, a *somdeo* (*sum-loo*), as mentioned in the article. The *sum-loo* was kept in a box and taken out once a year in order that "respects" might be paid to it. In the same connexion there are, in the record, a few Shan words that I cannot make out, as they are now obsolete here. Possibly they tell of one of these "plaques." The two things seem to go together. As Nan-chao was at least nominally under China at that time, the sub-kingdom also was. What could be more natural than that the nephews should be provided with a similar "plaque"—a Mongol-Chinese recognition of their kingship?

Now, as to the *somdeo* (*sum-loo*): I can hardly think that it was a "god" or image at all, unless it was an image of the Emperor. (Where images of the Emperor ever handed round in that way?) As *sum* may be the Shan word meaning "seal" or "stamp" (to make an impression), and as *loo* (*deo*) may mean "the only," I am inclined to think that the name refers to a seal or stamp for stamping official letters. Whether it was in the form of a "cylinder" or not is not significant, neither the "diamond or some other precious stone" that may have been set in one end of it.

Again, as to the date: the Mongol dynasty of China apparently did control Chieng Mai during the reign of Kublai Khan, but Mr. E. H. Parker states that the "Conciliators" ("Conciliators or Pacifiers") were "withdrawn" in 1342. The date you give (1408) is sixty-six years later. If "Timasa" meant the sub-kingdom on the Cambodia, this would give no trouble, but it does if Timasa meant Chieng Mai. What is the evidence that Timasa was Chieng Mai? Moreover, the date on the "plaque" given to the Nan-Chao king does not indicate the date of issue. The century (705-805) included two whole reigns and part of another. But the "plaque" (Plate A) gives manifestly the date of issue (1408). This is curious, but there is something here more curious still: Could there have been a "Comforter" in Chieng-Mai after they were withdrawn, or were they withdrawn from Burma only and given "privilege leave" in Chieng-Mai for another cycle? There is something even more curious than that. Why did the prince of Chieng-Mai send the "plaque" to his kinsman a thousand miles to the northward? Did he think that his northern friend had more need of the good advice, "Be faithful," than he had himself, or did Chieng-Mai actually control the Mao kingdom (with its nominal apanage, Assam) at this time?

In Shan writings, in so far as I have been able to gather, there is no indication either of Mongol-Chinese in Chieng-Mai, or of Chieng-Mai in the Mao kingdom, at the time referred to. The whole thing is a "Chinese puzzle." Now it may be that you can solve the puzzle.

W. W. COCHRANE.

*Reply.*

It will be convenient if I proceed to discuss your letter paragraph by paragraph.

*Paragraph 1.* I possess evidence to show that both the place (Timasa) and date (A.D. 1408) are correct. As regards the Nan-chao plaque, I may remark that the date given, 705-805, i.e., covering a century, is quite unusual in Chinese official documents. As a rule, such records are dated from the particular year in which they are issued.

In the year A.D. 1406, during the reign of Emperor Yung Lo of the Ming dynasty (A.D. 1403-25), Tonquin had become once more a dependency of the Chinese Empire, and the Shan Chief of Timasa, which was contiguous to Tonquin, would naturally hasten to submit to Chinese suzerainty and to accept his appointment of Conciliator or Pacifier from the Chinese Emperor. The date mentioned on the plaque is the "fifth year of the reign of Emperor Yung Lo," corresponding to  $1403 + 5 = \text{A.D. } 1408$ .

*Paragraph 2.* Geographical names are somewhat loosely applied in Chinese records. States may have boundaries varying from decade to decade or from century to century, and the best-known localities are fixed upon for purposes of identification. For instance, Ving-chang or Kieng Tsen, which the Burmans call Kyaingthingyi, has been a wilderness for several decades past, while its neighbours, Kengtung and Chieng-Mai, are better known to the outside world. In the circumstances mentioned by you, I am rather inclined to identify Timasa with your "sub-kingdom on the Cambodia River," but I suppose the Chinese annalists fixed upon Chieng-Mai as being the most convenient geographical expression and the best-known designation.

The *somdeo* (*sum-loo*), entrusted by the Nan-chao king to his two nephews on their mission to the sub-kingdom on the Cambodia River, cannot be identified with the plaque of A.D. 1408. The date is so carefully and correctly inscribed that there can be no possible mistake about its identity. I am afraid that we must look elsewhere for the missing Nan-chao plaque.

*Paragraph 3.* The word *somdeo* is an Assamese corruption of the Shan word *sum-lu*, which is again a Shan corruption of the Chinese word (as pronounced in the Cantonese dialect) *sum-lok*. In Yunnanese the word is pronounced as *sin-lu*. In Chinese *sum* means "confidence," and *lok* "a record," so *sum-lok* signifies "a record inspiring confidence," or, in other words, a credential or letters patent. In the Assamese from the second syllable *deo*, which is derived from the Sanskrit word *deva*, means "a god." Images of the Emperor were never handed round to be adored by the officials of the empire; but, at the time of each Chinese New Year, it was customary for all Chinese mandarins to kneel and bow down before the seats of their office, which were the token and credential of their authority and influence. Chinese official seals were kept in cylindrical cases or boxes called *Pao-ya*, which might be decorated with gems on the outside, and such boxes were wrapped up in a piece of yellow silk, yellow being the Imperial colour. According to the description given in the JRAS., p. 285, April, 1913, the *somdeo* evidently refers to the official seal which, in accordance with Chinese custom, was raised to the dignity of a fetish. It would be well if further efforts were made to trace this *somdeo* in Calcutta, where it is reported to have been sold.

*Paragraph 4.* The withdrawal of "Comforters" in A.D. 1342, as stated by Mr. Parker, refers to Burma only. "Comforters" were invariably indigenous chiefs or princes; and a Comforter, Conciliator, or Pacifier simply meant a "Premier Chief or Prince," who was charged with the duty of upholding Chinese suzerainty.

As stated above, I am inclined to think that Timasa meant the sub-kingdom on the Cambodia.

Do you think that the date on the plaque given to the Nan-chao king, namely 705—805, is quite correct? According to the Chinese Annals, I-mou-sün, king of Nan-chao, defeated the Tibetans with great slaughter in A.D. 794, and for this service he received from the Emperor of China a gold seal, duly dated, as king of Nan-chao. I-mou-sün died in A.D. 808. It would be in keeping with Chinese history if your dates could be read as A.D. 795—805, which covers the single reign of I-mou-sün.

You wish to know why the prince of Chieng-Mai sent the Chinese plaque to his kinsman a thousand miles to the northward. The explanation is simple. It is stated (JRAS., p. 287, April, 1913) that the Ahoms invaded Assam in A.D. 1228, that they kept up communication with their Shan relations in Chieng-Mai after they had settled in Assam, and that they obtained the metal plaque from them. During the two centuries following the occupation of Assam the Ahoms found their position insecure, as they were menaced by the Muslim conquest of Northern India. If there was any evidence or credential to show that the Ahom Chief of Assam was under the protection of the Chinese Emperor, he would secure immunity from attack on the side of Bengal. So the plaque of A.D. 1403 must have played the part of a veritable talisman in nursing the young Ahom kingdom into maturity and strength. The historical circumstances would appear to show that, at that period, Chieng-Mai exercised control over the Mao kingdom as well as Assam. My own experience of the Burmese and Talaing Annals indicates that native historians are loath to admit the subjection of their country to foreigners, and the Shan writers do not form an exception to the rule. They will never admit that Chieng-Mai was subject to China, or that the Mao kingdom was subordinate to Chieng-Mai.

There is sufficient evidence to support the identification of Timasa with Chieng-Mai. It is stated, in the *Huang Ch'ao Wen Hsien T'ung K'ao*, that Pa-pai-hsi-fu-kuo (or the kingdom of 800 women, one woman being in charge of each village) is situated to the south-west of the Shan state of Meng-ken, and that its ancient name is Ching-mai (Chieng-Mai). At the beginning of the Mongol dynasty (A.D. 1280-1368) it was frequently attacked by the Chinese. Communications were, however, difficult. Subsequently the state rendered its submission, and a "Comforter" was appointed. In the 24th year of the reign of Hung Wu, an Emperor of the Ming dynasty (A.D. 1392), two "Comforters" were appointed to the state of Pa-pai-hsi-fu-kuo, namely, one to Che-na and the other to Ta-tien. In the 5th year of the reign of Yung Lo, an emperor of the same dynasty (A.D. 1408), the state remained neutral. A military contingent was demanded from it, and it sent tribute to China.

It is further stated, in *Kang-chien-ho-p'ien*, *Yü-p'i-li-tai-tung-chien*, and *Kang-chien-i-chih-lu*, that in the 3rd regnal year of Emperor Yung Lo (A.D. 1406) a Chinese general named Mu Ch'eng demanded the sub-mission of Pa-pai-ta-tien, which is also called Pa-pai-hsi-fu-kuo. During the early days of the Ming dynasty (A.D. 1368-1644) two "Comforters" were appointed to that state. It is mentioned in the *Yünnan T'ung Chih*, or Gazetteer of Yünnan, that in A.D. 1408 a Hsin-fu or metal plaque was granted by the Emperor to the "Comforter" of Pa-pai-ta-tien, or Timasa.

*Further Letter from Mr. Cochrane.*

Your letter of the 28th instant gives the information I required.

There may have been a mistake in the date of the Nan-chao plaque. I am not a Chinese scholar, and had to rely entirely on the date given by Professor Parker. If such documents are customarily dated from the exact year of issue, a mistake is presumable.

That Chieng-Mai was at least nominally under the Chinese during the Mongol-Chinese dynasty there is no sufficient reason to doubt, and that state may still have recognized such overlordship at the beginning of the fifteenth century, though the Shan records here say nothing about it. That the Chinese had at least nominal control of the sub-kingdom on the Cambodia at that time there can be no doubt whatever. If the so-called "province of Chieng-Mai" extended eastward to the Cambodia at that date, identifying Timāsa with Chieng-Mai would have been quite natural, though the Cambodia River region in particular may have been meant. Line fences were often set over, and set back again or torn down altogether, according to the power and ambition of the various squabbling Shan princes.

I did not intend to identify the Nan-chao plaque, or the one given to the nephews, with the one found in Assam; I meant merely to say that I regarded it as one of the same kind, i.e., as a "letters patent" and not as a "god." This you show clearly to have been the case from your history of the word *somdeo*, from the Chinese *sun-lok*, corrupted in Shan into *sum-loo*, and further corrupted by the Ahoms into *som-deo*. Several words spelt here with an *l* are spelt with a *d* in Ahom (as *dao* for *liao*, a sword). The *deo* is not, therefore, to be confounded with the Sanskrit *deva*. In the Ahom and Kham-ti Shan writings of Assam a "god" is uniformly represented by the word *hpi* (or *pi*, according to taste in transcription), as it is here. If the "Comforters" were always indigenous chiefs (and Shans, over this way), it helps to account for the frisky intermeddling of Shans in Burman affairs during the Mongol-Chinese dynasty. It also helps to explain the meaning of Mr. Parker's statement that they were "withdrawn" in 1342.

The statement (JRAS., p. 287, April, 1913) is itself a Chinese puzzle. What is meant by "The Ahoms invaded Assam in A.D. 1228," that they "kept up communication with their Shan relations in Chieng-Mai after they had settled in Assam," and that they "obtained the metal plaque from them?" At that time the general-in-chief (Hsö-ka-phä) of the Mao Shan king (Hsö-hkan-hpa) conquered Assam, and the same king had already conquered Chieng-Mai. He held both under tribute till he died, after a long and eventful reign. This seems to be as certain as anything in the Shan records. If communication was kept up, it was, in the first instance, through the Mao (or Pawng) kingdom of what is now Eastern Burma. Hsö-hkan-hpa was followed on the Mao throne by weaklings. That Chieng-Mai between 1270 and 1408 may have retaliated and conquered the Northern Shans, including the Mao apanage (the Ahoms of Assam), is possible, but the Shan records here make no mention of such a pleasant social visit.

The Ahoms were menaced by the Muslim conquest of Northern India, and had several armed conflicts with the Muslims, but during that period they seem never to have received any aid from China; if they received such aid they were ungrateful, for they make no mention of it in their records. Still, I am inclined to think that the relation between the Chinese and all of the Shans from Chieng-Mai to the valley of the Brahmaputra was much closer than the latter acknowledge or than has ever been conceded. While practically independent of China, there still seems to have been a certain recognition of Chinese suzerainty. That Chinese "letters patent" was not fooling-round up there in Assam for nothing.

I happen to know a scholarly missionary (the Rev. W. Clifton Dodd, D.D.) of the American Presbyterian Mission of Northern Siam, working among the Laos. I may do well to write to him to see what light he may be able and willing to give on the whole matter. I hear that he, or one of his associates, has collected a large number of historical manuscripts.

W. W. COCHRANE.



## THE HOUSE THAT JACK BUILT: BURMESE AND TALAING PARALLELS.

## BURMESE

TALAING

ଛାନ୍ତିମୂଳପତେଲିତ୍ତାଙ୍କି॥  
 ଛାନ୍ତିଗୀର୍ଦ୍ଦିପିନ୍ଦିଜୁଣ୍ଠି॥  
 ପାନ୍ଧିପିନ୍ଦିମୂଳପତେଲିଜୁଣ୍ଠି॥  
 ଛାନ୍ତିଗୀର୍ଦ୍ଦିଗୋପାରିଙ୍କା॥  
 ଗାଗମୂଳପତେଲିପିନ୍ଦି॥  
 ଛାନ୍ତିଗୀର୍ଦ୍ଦିପ୍ରେଇଳ୍ଟି॥  
 ପ୍ରେଇପ୍ରେଇମୂଳପତେଲିଲ୍ଟି॥  
 ଛାନ୍ତିଗୀର୍ଦ୍ଦିଗମାତାଙ୍କି॥  
 ଗମାଗମାମୂଳପତେଲିତାଙ୍କି॥  
 ଛାନ୍ତିଗୀର୍ଦ୍ଦିଶ୍ଚିବୁଣ୍ଠି॥  
 ଦୁର୍ଦୁର୍ଦୁର୍ମୂଳପତେଲିହୁଁତ୍ତ୍ଵି॥  
 ଛାନ୍ତିଗୀର୍ଦ୍ଦିପୁର୍ବିହୁଁର୍ଦ୍ଦି॥  
 ପୁର୍ବିପୁର୍ବିମୂଳପତେଲିହୁଁର୍ଦ୍ଦି॥  
 ଛାନ୍ତିଗୀର୍ଦ୍ଦିଓାଲିଗୋପାରି॥  
 ଓାଲିଓାଲିମୂଳପତେଲିଗୋପାରି॥  
 ଛାନ୍ତିର୍ଦ୍ଦିପ୍ରିଣ୍ଟି॥  
 ପ୍ରିଣ୍ଟିମୂଳପତେଲିନ୍ଦି॥

အဲဘိုက်ငှကော်။  
 ငှင့်မူပပေါ်ကော်။  
 အဲဘိုက်ထင်ခူာက်။  
 ကောနိုင်ထောက်-ခူာက်ပလိုင်ဖြီ-သုင်ဟံ့ဖယာ။

## TRANSLATION

'Tree, tree, why are you crooked?  
 The heron perched on me.  
 Heron, heron, why did you perch?  
 To watch a fish.  
 Fish, fish, why did you rise?  
 Because the buffalo waded.  
 Buffalo, buffalo, why did you wade?  
 Because the herd beat me.  
 Herd, herd why did you beat?  
 Because I was hungry for rice.  
 Rice, rice why weren't you boiling?  
 Because the fire didn't blaze.  
 Fire, fire why didn't you blaze?  
 Because the firewood was damp.  
 Firewood, firewood why were you damp?  
 Because the rain rained.  
 Rain, rain why did you fall?  
 Because the frog called.  
 Frog, frog why did you call?  
 Because I was thirsty.  
 Little blackguard frog in the well under the banyan tree is there not  
 enough to drink?

## NOTES.

တံ့က် tangok pronounced ngok.

လူ lui to wade not equivalent to the Burmese လူ။

ဂော keeper. Haswell gives only ဂောရိုး elephant keeper.

တွဲ tanom but pronounced kanom and so written by Haswell.

က္ဗာ္တာ ka-tde-ak pronounced tdeak and so written in Haswell.

ထောက် a term of abuse.

It is curious that in both versions the first two lines and the last are the only ones that contain rhymes. Again, the interrogative particles ဆဲ or ဆဲး in Burmese and ကျေး in Talaing are always omitted.

J. A. STEWART.

## THE BODHISATTVA MAITREYA IN BURMA

In reading over a back number of this Journal (Vol. II June 1912 page 101). I noticed an article referring to the cult of the Bodhisattva Maitreya in Burma. The author mentions that the cult of this Bodhisattva is "practically unknown in Burma," and that references to it are therefore of interest. Three months ago I was at Kalewa on the Chindwin River. There is a high hill standing behind the little town. A boatman told me a legend concerning it, which, he said, stated that a treasure lay hidden in it against the advent of Maitreya. The money would then be found, and be used for religious purposes.

C. M. ENRIQUEZ, CAPT.



## A PREDICTION

A *taboung* (သော်ငါး) is a prediction with a sarcastic meaning of something which is expected to take place in the future. It is generally put in the form of a verse. The accompanying *taboung* is supposed to have arisen in the time of the Kings of Burma and has been sent to us by "Old Grandfather" (အော်ဒုရို). It may be translated thus :—

We loved our lads who kept their hair  
In tresses waving in the air.  
But now behold ! they 've cut it short,  
With changing Fashion thus they sport.

The original meaning was sarcastic, implying that the proper Burmese fashion was to have the hair long, being knotted and kept in position by a fillet. But fashionable young men and those who lately left the priesthood led the world of fashion by cutting their hair short. And young ladies to show their approval sung :—

We loved our lads who kept their hair  
In tresses waving in the air.  
But now behold ! they 've cut it short,  
With changing Fashion thus they sport.

Later, with the conquest of Lower Burma by the English a new meaning was acquired. Wise people and leaders of society comparing the English "Roundhead" with the long-haired Burman judged the former to be more elegant. And so it was sung :—

We loved our lads who kept their hair  
In tresses waving in the air.  
But now behold ! they 've cut it short,  
With changing Fashion thus they sport.

But some maintain that the *taboung* is applicable most to prisoners, whose release from prison and also from the burden of long hair is celebrated by their wives and daughters by singing this doggerel :—

We loved our lads who kept their hair  
In tresses waving in the air.  
But now behold ! they 've cut it short,  
With changing Fashion thus they sport.

It is still susceptible of one more meaning. As in times of Burmese supremacy in fashion a foreigner used to pass for a Burman by tieing a *phasoh* round his waist and his hair into a knot, so now also any foreigner loves to pass for an Englishman, a veritable Londoner, if he only has the "soldier crop" and wears trousers and a hat.

But this change in fashion in cutting the hair short loses much of its oddity by being favoured by our boys in English schools. But let them not make themselves ridiculous by not following either one fashion or the other. For some schoolboys neither cut their hair short nor tie it into the Burmese knot, but roll it up from behind the head and as they use a curved hair comb made of tortoise shell to keep it in position in the style of the islanders of Ceylon, it is difficult to say whether they are boys or girls !

ရွှေးမြန်မာမင်းတို့ထက်ထက်ပေါ်သော  
တံဘောင်။

အရှင်ကမှာရောင်ဖြီးပွဲ။  
ခုများမှာဆံတို့ဖြတ်ဆွဲ။  
တလတ်ကယ်ရင်တွေ့သော။

မူလအာမို့ယိုကား၊ မြန်မာလူမျိုးတို့ သဘောမှာရောင်တိုး၍ အော့လုံးပေါင်းမှ မချုလှို့  
သည်ဟုမှတ်ယူထဲကြသည်။သို့ရာတွင်ကျောင်း ကရှင်လူတွေ့ကဲခြင်းကာလသား တို့မှာဆံတို့တို့နှင့်  
ပင်ထို့သည်ဟု ကာလသိုးတို့ မျက်စိတွင် ထင်မြောကြောင့်။

အရှင်ကမှာရောင်ဖြီးပွဲ။  
ခုများမှာဆံတို့ဖြတ်ဆွဲ။  
တလတ်ကယ်ရင်တွေ့သော။

**ထုစ္စားမျိုးကြော်လေသည်။**

ငှါးနှာက် အကိုလိုအခိုးရမင်းတို့သည် အောက်မြန်မာနှင့်ကိုသိမ်းပိုက်ချုပ်မီးတော်  
မူဗြာသာအပါပညာရှိမြန်မာလူကြီးသူမအချို့ကား။

အရှင်ကမှာရောင်ဖြီးပွဲ။  
ခုများမှာဆံတို့ဖြတ်ဆွဲ။  
တလတ်ကယ်ရင်တွေ့သော။

ဟူသော တံဘောင်သည် အကိုလိုတူမျိုးကိုသိလိုသည်။ အထယ်ကြောင့်နည်း ဟူမှုကား။ရောင်  
တိုး၍ အော့လုံးပေါင်းလေ့ကြော်သော မြန်မာလူမျိုးထက်၊ ဆံတို့နှင့် သိုးဆောင်းသော အကိုလို  
လူမျိုးကသာ၍ ယဉ်ကျေးပေသည်ဟုပြောဆိုတဲ့ကြသည်။

ငှါးပြို၊ မကားကောင်းမှုလျှင်၊ မကားဖောင်းလည်းရှိမြှုပြစ်သည်အတိုင်း အနျှောကင်းတံ  
ဘောင်သည် အကိုလိုတူမျိုးကိုသာ ဆိုလိုသည်မဟုတ်၊ အကိုလိုအခိုးရမင်းတို့၏ ထောင်တွက်  
များကိုလည်း ဆိုလိုသည်။ အထယ်ကြောင့်နည်းဟူမှုကား၊ လူမှိုးသားပြီအချို့သော လူသိုးတို့  
သည်ထိုက်သက်ရေးထောင်ဒါကိုပံ့၍ ထွက်လာကြသောအပါ၊ ငှါးတို့၏ သား မဟားတို့ကဲသိုး  
၏ဖြီးချို့ပြီးလျှင်။

အရှင်ကမှာရောင်ဖြီးပွဲ။  
ခုများမှာဆံတို့ဖြတ်ဆွဲ။  
တလတ်ကယ်ရင်တွေ့သော။

**ထုစ္စားမျိုးကြော်လေသည်။**

ငှါးပြို၊ ရေးကြ မြန်မား၌ စွန်းထွန်းပသည့်အခါမှာမည်သည့်လူမျိုးခြားမဆို၊ ပုဆိုးဝတ်  
၏ ရောင်တိုးလျှင် “မြန်မာ” ထဲ မှတ်ယူထဲကြရာ၊ ထာခုမှုကား အကိုလိုပို့ဆိုနှင့် ထွန်းပသည်အပါ  
ဖြစ်၍ မည်သည့်လူမျိုးခြားမဆို၊ တောင်းသို့ဝတ်၍ ဒီးထဲပဲဆောင်းလျှင် “မြိုလ်” ဟုခေါ်လေ့ကြ  
သည်။

ဆိုခဲ့သော တံဘောင်သည်၊ ယခုအကိုလို ခာသင်ကျောင်းသားများနှင့် အထူးကိုက်သော်  
လည်း၊ ကာလအာဏျာက်ဆန်းသမ်သောတိုးစံတွင်မပါမဝင် ကျွန်းကျွန်းသောအလေ့မှာအချို့သော  
ကျောင်းသားတို့သည် ဆံတို့လည်းမဖြတ်၊ ရောင်လည်းမထဲး၊ နောက်ဆံပုတ်ကို အုပ်လုံးစည်း  
ထားသောကြောင့် သီဟို၌ကျွန်းသားများကဲ့သို့ ထိတ်ခွဲနိုင်သီးကောက်လည်းမိုက်ထားလျှင်ပြင်၍  
လူမျက်စိမှား၏မိန့်မလားဟုထင်မှားရန်၌ကျော်သည်။

အသိုးအို့။

## **PSALMS OF THE EARLY BUDDHISTS (THE BRETHREN)**

Psalms of the Brethren is a translation from the Pali of Theragatha. It is a companion volume to the Psalms of the Sisters, which appeared sometime ago. The text forms the best extant anthology we have of Pali poetry. The verses are full of poetry, being ecstatic utterances of arahants, enjoying the bliss of Nirvana and hence giving full expression to their emotions. In grandeur and perfection of form, these utterances have been compared to "the call of distant lion's roar, Resounding from the hollow of the hills." We can therefore sympathize with Mrs. Rhys Davids, the translator, when she confesses that "the English rendering mocks the glowing poetry of the original" p. 218. This is true of many another passage where only a true poet can hope to do full justice to the sentiments expressed. But Mrs. Rhys Davids has done her best and though her verses may not breathe the spirit of genuine poetry, they are faithful and straightforward and on the whole convey the spirit of the original and acquire some value thereby. What is of more credit to her is the way in which she has sprinkled foot-notes. These bear the fillip of scholarship and are treated in a way to commend themselves to both scholar and general reader alike.

Another proof of the translator's scholarship is shown by the abundant use made of the Pali commentary of Dhammapala, which is the only way of preserving the Pali tradition. We have no faith whatever in a work translated from the Pali without the help of the commentary. A modern scholar may have very high attainments but if he ignores the Pali tradition preserved for so many years in the commentary, he is only reading his modern thoughts into the ancient tradition. What we want to know about a passage is how the ancient Buddhists have understood it and not how a modern scholar can twist it according to the aberrations of his thoughts. Who shall pose himself as a greater scholar than Buddhaghosa or Dhammapala, the very pillars of the Buddhist literature? We congratulate Mrs. Rhys Davids on her success in following the ancient tradition.

M. T.



## HINDU DRAMATURGY

The Dasarupa is a work on the canons of Hindu dramatic composition, now published for the first time with an English translation in the Columbia University Indo-Iranian Series. It was composed by Dhanamjaya in the last quarter of the tenth century A.D. Dr. Haas, the translator, has done his work in a very thorough-going manner and has treated the subject from every conceivable point. He has discussed, for instance, the authorship and date, the scope and importance, the style and method of treatment, the metres and metrical considerations of the Dasarupa, telling us as much about the commentary, the previous editions and the present edition of the text, etc. The result is a book which is overburdened with so many details that despite its great merits, there is the danger of its defeating its own object. We fear we may not see the wood for the trees.

M. T.

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## THE BUDDHIST LEGEND OF JIMŪTAVĀHANA

The Legend of Nāgananda is interesting as a Buddhist drama based on a Sanskrit work, Katha-sarit-sagara. It is a close dramatization of the legend of Jimūtavahana which occurs in the 22nd and 90th chapters of the Sanskrit work. Like most Indian dramas, the authorship is not decidedly known, but it is certain that the drama was produced under the patronage of King Harsha, whose name is connected with much that is interesting in Indian dramatic literature. Some even go so far as to attribute the authorship to the accomplished king but this is not probable. It is more probable that the author was a poet under the King's patronage, and that he has allowed his name to be superseded by that of the King to derive popularity for his play. Whoever he may have been the author has made a unique distinction in addressing the benediction to the Buddha. The whole religious atmosphere is Buddhistic and the principles inculcated are Buddhistic. The virtue *par excellence* is self-renunciation, as exemplified by the sacrifice of Jimūtavahana in the cause of the Serpents. There are, however, traces of Hindu beliefs, which are put in, it would seem, as a sort of compromise between Hinduism and Buddhism. Witness the worship paid by Jimūtavahana to the Goddess Gauri towards the end of the play. This again is another proof of the spirit of religious toleration prevailing in King Harsha's time.

We recommend the present translation made by Mr. Hale-Wortham as a faithful rendering of the original. The Legend of Jimūtavahana precedes that of Nāgananda and both are preceded by a succinct introduction.

M. T.

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## DISCOURSES OF GOTAMA THE BUDDHA (IN 2 VOLUMES)

BY BHIKKHU SILĀCARĀ

This is a translation from the Pali of Majjhima Nikaya . This Nikaya has the advantage over others of being neither too long nor too short. In point of doctrine and ethics it stands on a high level. Altogether it is one of the most important and characteristic of the Buddha's sayings.

Bhikkhu Silacara is greatly to be praised, for his pains in translating it into English. He has translated the first fifty. Although snatches of these discourses have been from time to time translated by various writers, we have not had a systematic translation before this. The translation has done the experiment of curtailing all the repetitions and stock phrases in the original. This we think is harmless unless carried to excess. We must, however, always remember that these repetitions and stock phrases were meant to be committed to memory at a time when printing was not known in India and they were thus indispensable as aids to memory. As such they are justifiable. But now that they are put in black and white, they may appear to offend the eye besides being a mere waste of printed space. One is thus justified in cutting them short with discretion.

The translator has disarmed criticism by the announcement on the title page that his work has been "freely rendered and abridged." Otherwise one would be tempted to ask why there are so many quaint phrases and expressions. One question we must ask—On what grounds of abridgment has lie left untranslated the Simile in the original at the end of Chapter V the Anangana sutta?

M. T.

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PROCEEDINGS  
OF THE  
BURMA RESEARCH SOCIETY

The annual meeting of the Burma Research Society was held at Rangoon College on Tuesday, the 3rd February, 1914, at 5-30 p.m. Sir Henry Hartnoll presided and the following were present: Mr. M. Hunter, Mr. G. F. Arnold, U May Oung (vice presidents), Mrs. E. M. Powell-Brown, Miss Morris, Mr. Justice Parlett, the Hon. U Hipay, the Rev. J. F. Smith, Dr. T. F. Pedley, Dr. G. R. T. Ross, Messrs. J. T. Best, A. E. Bellars, A. C. J. Baldwin, A. P. Morris, G. H. Luce, Ne Dun, Maung Set, Maung Thein Kin, Maung Kin, Maung San U, Hla Tun Pru, Aung Gyee, Kin Maung, Win Pe, Maung Ba, Po Tun, Maung Tin (Hon. Editor), A. D. Keith (Hon. Secretary).

Before the business of the meeting was proceeded with the Hon'ble U Hipay, on behalf of the Society and himself, offered the president hearty congratulations on the high and well-deserved honour which had recently been conferred upon him. Sir Henry, who was very warmly received, expressed his thanks in a brief speech.

The first business on the agenda paper was the reading of the report for the year, which ran as follows. During 1913 five members resigned and five were elected. The number of members therefore remains the same as at the end of 1912, namely, 245. The editor of the *Journal*, U May Oung, resigned his post at the end of the year. Professor Maung Tin has been acting in his place. There was no other change in the officers of the society. The Society met twice during the year, committee meetings being held before each of the meetings of the Society. The sub-committee met at intervals during the year. A suggestion made by Mr. Carey and other members that the Society should undertake the publishing of a revised edition of Stevenson's revision of Judson's Dictionary has been considered by the sub-committee. In view of the fact that it is understood that the A. B. M. Press is bringing out a revision of Stevenson's Dictionary and in view also of the fact that such an undertaking would be a matter of great expense and difficulty the sub-committee is of opinion that the proposal is for the present, at least, premature.

The report was passed. In putting it to the vote the president remarked that the Society had not done very much during the year. After its inception at which great interest had been shown a period of stagnation was only to be expected. More articles were wanted for the *Journal*. During the year only one number of the *Journal* had been published but the second number—they had, it would be remembered, arranged to publish two numbers a year—was now ready and would be in the hands of members within a few days. Members could help the Society also by attending the general meetings and taking part in the discussions.

A short discussion took place over the project of publishing a revised edition of Judson's Dictionary. It was felt, however, that the matter should be left in the hands of the sub-committee.

An abstract of the accounts for the year was then read. This showed a balance in hand on the 1st January, 1914 of Rs. 5,961-15-0. The president explained that, although this balance appeared large, it must be remembered that only one number of the *Journal* had been issued last year. The sub-committee, moreover, were considering the possibility of certain publications, which if finally approved and agreed to by the Society would reduce the balance considerably.

The accounts were duly passed.

The next business was the election of officers and the following gentlemen were elected: President, Sir H. S. Hartnoll; vice-presidents, Mr. M. Hunter, Mr. G. F. Arnold and U May Oung; editor, Professor Maung Tin; Hon Treasurer, Maung Set; Hon. Secretary, A. D. Keith; committee, Hon. Mr. R. E. V. Arbuthnot, Hon'ble U Hpay, Bishop Cardot, U Htoon Myat, Mr. W. G. Wedderspoon, Hon. Mr. J. G. Rutledge, Rev. J. F. Smith, Rev. W. C. B. Purser, Mr. J. T. Best, Mr. J. W. Darwood, U Ne Dun, Dr. Ross, U Kin, Captain Ba Ket, U Shwe Zan Aung, Mr. R. F. Greer.

The Hon. Secretary then read Mr. J. Stuart's paper "Why is Burma sparsely peopled?" The writer pointed out the curious fact that the tract of country which included Burma, Siam, and French Indo-China, although apparently, a fertile tract never seemed to have had a population which at any time pressed at all hardly upon the food supply. Round this tract were countries like India and China in which the population has always been too great for the available food supply. Millions in these countries must have gone from birth to the grave without ever having known what it felt like to get enough to eat; yet a similar condition of things never prevailed in Burma. What was the explanation? Bad government and despotism could not explain it. Such misfortunes were just as common in India and China. Wars—petty, local wars—could not explain it. Wars were just as prevalent and just as destructive in India. The writer felt himself absolutely unable to offer any explanation. He would only make a suggestion. It might be possible that Buddhism, despite its many excellencies, was not so effective an agent in promoting the numerical growth of a nation. Buddhism regarded life as a misfortune and marriage, so far from being looked upon as sacerdotal or sacramental, was regarded as a concession to human weakness. Buddhists had not the strong religious inducement which the Indians or Chinese had to continue their line. Natural affection no doubt was as strong in Burma as anywhere in the world, yet it might be possible, however less in accordance with modern views such an idea might be, that the sacerdotal or sacramental view of marriage had a greater effect than the secular view of marriage in promoting the growth of population. Take, for example, the Jews. Despite persecutions and expulsions the Jews were to-day more numerous than they had ever been.

U May Oung said that he had expected to be given an explanation, not to be asked for one. Mr. Stuart's suggestion that Buddhism discouraged population would not explain another mystery—the scant population of North America before the English arrived. Mrs. Powell-Brown had suggested to him that one cause of scanty population might be the hard life led by the average Burmese woman. In India the zenana system made life easier for a woman; in China the binding of the feet prevented her from doing such hard work as her sister in Burma. Personally he himself did not think that along the waterways, where life was easy, the population in Burma had been less than that of other countries. There was reason to believe that wherever food had not been sparse the population had been quite as large as if not larger than the population of corresponding areas in other countries.

Dr. Ross remarked that theories like Mr. Stuart's should only be put forward in the last resort when every other explanation had failed. Such a theory could only hold good if two countries being exactly the same in every other respect, religion were the only distinction. One reason for the greater proportionate population of India and China was the fact that in those countries the fertile areas were continuous with one another whereas the Irrawaddy Valley was a comparatively narrow strip. There were no great sweeps of fertile soil in Burma. The fertile strips were separated by mountain ranges. The writer of the paper seemed to have taken "density of population" in two senses, one as constituting a population which pressed hard on the food supply and, secondly, in the sense of vast numbers. Now a population might press on the food supply without being very large. It all depended on the extent

of the supply. The great cause of depopulation is not the presence of despots but the absence of any central control. Man will trade under almost any laws as long as they can be sure that these laws will be enforced. Burma never had any authority sufficiently strong or sufficiently central to ensure the enforcement of the laws.

Dr. Pedley was of opinion that Buddhism had nothing to do with depopulation. Sanitation and hygiene, as the writer said, may have been as bad in India as in Burma. They could scarcely have been worse. Burmese methods of midwifery must always have been a source of depopulation as they are at the present day. Dr. Pedley thought that instead of speculating vaguely over depopulation in the past it would be better if the Society were to assist in preventing depopulation in the present.

Professor Maung Tin considered that the population of Burma may have been depleted by the migrations of the Talaings into Siam. Great migrations took place under Anawrata and Alompra. Moreover the Burmese treatment of prisoners of war—the wholesale massacres which invariably followed a victory were not conducive to the growth of population.

Mr. Ba Dun added a further cause—climatic conditions. Great parts of the world had dried up. Burma also suffered from periods of drought. Moreover, there was never a kingdom in Burma which was really united. Dynasties in India and China lasted a long time. In Burma there were incessant wars—wars, moreover, of much more recent date than those in India. Depopulation had apparently ceased in Burma nowadays, for at the last census Burma had increased her population at a rate four times greater than that of England.

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# THE LINGUISTIC SURVEY OF BURMA\*

BY  
C. MORGAN WEBB, I.C.S.

## THE NEED FOR A SURVEY.

When it was decided to effect a linguistic survey of India there were many reasons operating to necessitate the exclusion of Burma from the survey. At that time, administrative control over the more remote districts of Upper Burma had been but recently established, and Government was concerned rather with its primary and essential functions, than with secondary enterprises of the nature of a linguistic survey. Moreover, most of the languages spoken in Burma were then almost unknown. There was comparatively little preliminary knowledge upon which a successful survey could be based, and much pioneer and exploration work had to be performed before a detailed survey could be considered possible. And perhaps more potent than all other reasons, the magnitude of the task of effecting a survey of the languages of India was so appalling, that it was necessary to reduce the work to more reasonable dimensions by cutting away any portion that could safely be deferred for future consideration. Burma was therefore excluded from the linguistic survey for reasons of expediency only. Now that the original work has been practically completed, it is opportune to examine the question of the exclusion of Burma afresh, and to enquire whether the conditions determining such exclusion still hold good. It is important to note that the question of the differential treatment of India and Burma does not arise. Burma was excluded, not because its need for a linguistic survey was less imperative than for the remaining provinces, but because local and temporary reasons suggested a postponement. If conditions have changed, if the reasons prompting exclusion no longer operate, then the only logical course will be to extend the survey to Burma and to complete the magnificent work already accomplished, by making it a comprehensive record of every language and dialect, spoken within each province of the Indian Empire. The present note is an attempt to examine whether the time has now come when the temporary exclusion of Burma from the scope of the linguistic survey should cease. The initial paragraphs of the introduction, and of chapter I, of the Burma census report for 1911 indicate that the conditions of the province as regards administrative control over remote areas have materially changed since the linguistic survey of India was commenced. And in the short period elapsing since that report was written, the creation of the new district of Putao has further reduced the areas exempt from administrative supervision. The only two important areas now entirely outside the administration of the province are, (i) the unadministered Chin areas in Northern Arakan and the Pakokku Chin Hills, (ii) the Kachin and Naga areas between the Putao district and the Assamese border. The absence of administration in these two areas is not an insuperable obstacle to an effective linguistic survey within their limits. Nor can it now be stated that "most of the dialects belonging to the Burma group are all but unknown and only the classical language of the Burmese literature as it is spoken by educated Burmans has been made available to philologists" (Sir George Grierson, page 379, Volume III, Part 3 Linguistic Survey of India). Even though the linguistic survey of India was not extended to Burma, the existence of dialects of the Mon Khmer and Tai families, and of the Burma, Kachin and Kuki Chin groups of the Tibeto-Burman family in Assam, has led to an investigation more or less detailed of the langu-

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\* Read at the Ordinary Meeting held on June 26th 1914.

ages spoken in Burma. Volume II of the linguistic survey is devoted to a consideration of the Mon Khmer and Tai families, part 2 of Volume III includes a brief analysis of the Kachin groups, and part 3 of Volume III comprises the results of the survey with regard to the Kuki Chin and Burma groups of the Tibeto-Burman languages. Moreover, in addition to these records, classifying and tabulating what was then known of some of the languages spoken in Burma, there exists the valuable work of Major H. R. Davis on the frontier dialects of the province. In this connection I may quote the following from the Burma census report for 1911 : "The most important contribution to the knowledge of the languages spoken in Burma since the completion of the linguistic survey is to be found in the work on Yün-nan by Major H. R. Davies to which reference has been previously made. The comparative vocabularies furnished, and the information given in appendix VIII of the volume, supplement the work of the linguistic survey, and bring the date for extension of that work to include the Burmese portion of the Indian Empire appreciably nearer." Mention must also be made of the valuable linguistic and philological studies made by members of the Burma Research Society and published in the Society's Journal. The following statement gives a rough list of some the contributions to which I refer. They indicate that the need for a linguistic survey of the province is so great, that important steps to this end are being taken by enthusiastic members of a quasi-public society. They certainly demonstrate that the survey can no longer be postponed merely for lack of initial knowledge : Elementary Studies in Lahoo, Ahka (Kaw) and Wa languages, by the Rev. C. B. Antisdel, M. A., B. D.; Notes on Talaing Epigraphy, by C. O. Blagden ; The International Phonetic Association, by R. Grant Brown, I. C. S.; "Guide to the Study of Shan," review by the Rev. W. W. Cochrane ; A Contribution to Burme Philology, by J. A. Stewart, I. C. S.; Note on "Encouragement of Oriental Learning"; Notes on Burmese Prosody ; Note on Burmese Spelling, by M. O.; Burmese Philology, by C Duroiselle ; Talaing Nissayas, by C. Duroiselle ; Note to above, by Professor Maung Tin ; Some Place Names, by J. S. Furnivall, I.C.S. Nor can it be suggested now that the extension of the linguistic survey to Burma would jeopardise the success of the general survey of India itself That work is now on the point of completion. Indeed, the precise contrary may now be stated, that the exclusion, or rather the partial and ineffective treatment, of the groups and families of languages spoken in Burma seriously prejudices the value of the survey as an authoritative work of reference. Voume II and parts 2 and 3 of Volume III are not worthy of their position in the existing series of volumes. They are neither complete, nor correct, nor up-to-date They have not been considered suitable for distribution in Burma, although they purport to deal with the groups and families of languages spoken principally within the province. Until these volumes have been superseded by a record, complete in all respects for the eight groups of languages indigenous to Burma, the linguistic survey of India will not be an accomplished fact.

#### LANGUAGE AS A CLUE TO THE ORIGIN OF THE BURMESE.

Hitherto this note has been concerned with a purely negative aspect of the question, with a consideration of the absence of the reasons which dictated the exclusion of Burma from the original scheme of survey. But the positive reasons are still more conclusive. The following quotations from chapter 9 of the census report of 1911 are most pertinent :

"For the first time the Hpoms have made an impression on the census records. They form a small tribe located on the Irrawaddy in the vicinity of the upper defile in the Myitkyina district. Linguistically their importance is quite disproportionate to their numbers. It is probable that they originated in one of the later waves of the Tibeto-Burman invasion, which spent its force before it

emerged into the central basin of the Irrawaddy Valley. Unable to complete their migration, and amalgamate with the cognate tribes which preceded them, their progress was arrested by the incursions of Shan tribes. Arriving from the east the Shans appeared on their flank and intervened between them and their southern objective. For many generations they have been surrounded by Shans, and the characteristics suggesting identity of origin with the Burmese race have been almost completely submerged. A close and intimate study of the Hpon language would solve numerous interesting problems concerning the origin and early migrations of the Tibeto-Burman. A commencement has already been made by Major Davies in his work on Yün-nan, and he has arrived at the following conclusions: 'An interesting fact in connection with the Tibeto-Burman languages is the very close connection that exists between the speech of the Ma-rus, Zis, La shis A-ch'angs and P'ons on the one hand and the Burmese on the other. This is not the general likeness that the languages of the Lo-lo and other Tibeto-Burman tribes have to Burmese but is sufficiently close to warrant the belief that at some not very distant period these races spoke one language.' So important are the issues involved, and so rapidly are the original characteristics of the tribe and the language disappearing, that an immediate and thorough examination of the structure of the language and the legends and traditions of the people would be of great practical value in determining issues of a wide and far-reaching nature."

Also: "A group of hybrid dialects spoken in the extreme north of the province and tentatively classed as Kachin-Burma hybrids is, linguistically and ethnographically, of far greater importance than their insignificant numbers would suggest. Although the extension of census limits has brought a much larger number of the members of the corresponding tribes into the range of observation, the number of speakers of the tribal dialects show a marked decrease. It is only possible to speak with certainty of those portions of the tribes within the administrative area of the province, but judging from the result it is clear that the dialects are rapidly being submerged. The necessity for a complete study of their vocabularies and structure before they are finally lost is seen from the following opinion of Major Davies as to the origin of the Burmese race: 'This fact may I think throw some light on the disputed point as to how the Burmese reached their present country. For beginning with the P'ons who live on the Irrawaddy just north of Bhamo we have a regular line of Zis, Ma-rus, and La-chis leading up to the eastern branch of the Irrawaddy. Above the confluence, the eastern branch is in fact entirely inhabited for a considerable distance by Ma-rus and La-chis, while on the western branch these tribes do not, I believe, exist. The inference is that the Burmese came down the eastern branch of the Irrawaddy and that these tribes are stragglers left behind in the southerly migration of the main body of the race.' It is probable that the only existing clue to the much discussed question of the origin of the Burmese race lies hidden in the dialects just mentioned. They are rapidly disappearing. Before the next census it is probable that if any members of these tribes survive they will be speaking languages largely corrupted by Shan and Kachin. If a scientific study of the structure and vocabulary of these dying forms of speech is not shortly attempted, the loss will be irreparable."

#### THE MON KHMER FORMS OF SPEECH.

But it is possible to explore into periods of time far more remote than the formation of the Burmese race. As regards the Mon Khmer forms of speech Sir George Grierson writes: "Of what language this original substratum consisted, we are not yet in a position to say. Whatever it was, it covered a wide

area, larger than the area covered by many families of languages in India at the present day. Languages with this common substratum are now spoken not only in the modern province of Assam, in Burma, Siam, Cambodia and Anam, but also over the whole of Central India as far west as the Berars. It is a far cry from Cochin China to Nimar, and yet, even at the present day, the coincidences between the language of the Korkus of the latter district and the Anamese of Cochin China are strikingly obvious to any student of language who turns his attention to them. Still further food for reflection is given by the undoubted fact that, on the other side, the Munda languages show clear traces of connection with the speeches of the aborigines of Australia." Also : "It may be gathered from the paper quoted below that his opinion is that most probably the substratum is a Munda one, and that a population akin to the Indian Munda races originally extended as far east as further India. This was before the beginnings of those invasions from the north which resulted first in the Mon Khmer and afterwards in the Tibeto-Burman and Tai settlements in that region." The key to those obscure problems is in all probability to be found in a study of the Talaing, the Wa and the Palaung languages of this province, and a comparison of the results with the remaining languages of this family. The following quotation from the Indian census report for 1911 (paragraph 406) indicates the magnitude of the problem, the limitations of its solution to the area covered by the linguistic survey, and the imperative necessity of the extension of the survey to Burma to confirm and verify the conclusion already attained : "He (Pater Schmidt) has finally settled the affiliation of the Munda languages. He has clearly shown that the basis of the Munda and of the Mon Khmer languages is identical and he groups them together as a single family of languages, which he names the Austro-Asiatic. There is another family, which he calls the Austronesian, including Indonesian, Melanesian and Polynesian. Finally, he combines the Austro-Asiatic and Austronesian into one great family which he calls the Austric. These striking conclusions, which have been fully accepted by Sir George Grierson so far as India is concerned, result in the most widely spread speech-family of which the existence has yet been proved. It extends from Easter Island off the coast of South America in the east, to Madagascar in the west, and from New Zealand in the South to the Punjab in the north."

#### THE SIAMESE-CHINESE FAMILY.

Although the problems to be solved are not so far reaching as those involved in the Mon Khmer forms of speech, yet the local interest in a survey of the languages of this family is intense. The Tai (or Shan) and the Sinitic (or Karen) groups of languages form with Chinese the three main constituents of this family. Although there is a wealth of material accumulated in detailed studies of the various dialects of the two groups, there has never been a comprehensive philosophical analysis to determine the mutual relations existing between them. The Karen group is so exclusively confined to this province that it was excluded from the lists of the linguistic survey of India and failed to find inclusion in the comprehensive study of the North Eastern Frontier by Major Davies. A critical comparison of the structure of the Sinitic languages with Chinese may possibly lead to a solution of the much discussed question of the origin of the Karen race. Though the same interest is not to be found in a survey of the Shan dialects, yet their present unscientific classification, partly geographical, partly racial, is urgently in need of modification. The Shan forms of speech are the most widely spread of any in the Indo-Chinese Peninsula. They extend from Assam to the Chinese province of Kwangsi and from Bangkok to the interior of Yunnan. It is highly essential that the analysis of the Tai dialects spoken in Assam which occupies the greater portion of Volume II of the Linguistic Survey should be supplemented by a similar analysis of those spoken in Burma.

### THE KUKI-CHIN GROUP.

No group of languages could be more in need of survey than those of the Chin group districts of Burma. Over a large portion of this area the forms of speech change from village to village, the divergence at a distance of twenty miles being so great as to render two persons dwelling that distance apart mutually unintelligible to each other. The analysis of the Chin dialects of Assam occupies practically the whole of part 3, Volume III, of the Linguistic Survey. The necessity for a similar survey in Burma is indicated by the following quotation from the report on the Census of India 1911 (paragraph 417) : "Our knowledge of these dialects is still so slight, and the census record of them so imperfect, that it is not worth while dwelling on those distinctions. It may be hoped that the attention which has now been directed to the subject may lead to a more accurate record of the Chin dialects in 1921. It is in fact highly desirable that at least a preliminary survey should be undertaken of all dialects spoken in Burma."

### THE KACHIN GROUP.

The fact that there were 1,920 Kachins in Assam led to a cursory examination of two dialects of this group in the course of the linguistic survey of India. The large number of Kachins in the border districts of Burma (162,368 at the Census of 1911) and the recent formation of the Putao district in an area largely populated by Kachins (as yet un-enumerated) are good reasons for expanding this inadequate examination into a comprehensive survey.

### LINGUISTIC IMPORTANCE OF BURMA.

It has been impossible to touch more than briefly on the necessity for a survey of the numerous families and groups of languages to be found in Burma. I have not mentioned the necessity for an authoritative survey of the premier language of the province, with a determination of its relations to its principal dialects, Arakanese and Tavoyan, and its connections with the cognate languages of Intha, Taungyo, Danu and Kadu. But even in a brief statement of the nature of this note, it is apparent that Burma is of supreme linguistic importance. It contains the key to many problems connected with the inter-relations of the Tibetan, the Chinese and the Austronesian forms of speech. Major Davies writes that "It is safe to assert that in hardly any other part of the world is there such a large variety of languages and dialects as are to be heard in the country which lies between Assam and the eastern border of Yun-nan and in the Indo-Chinese countries to the south of this region." A detailed investigation of the divergencies and the resemblances of this complex variety is both from an administrative and from a scientific point of view a matter of extreme urgency.

### METHODS OF SURVEY.

In suggesting the methods by which a linguistic survey should be conducted, it is necessary for me to state that there is, to the best of my belief, no complete set of the volumes of the Linguistic Survey of India to be obtained in the Province. The set in the Bernard Free Library which I have consulted in making this note is incomplete in several respects. In particular, Volume I, which describes the method followed in India, is absent. I am therefore dependent on some rough notes I made when on leave in England. It must be understood that this second portion of this note is incomplete and tentative,

merely a few suggestions which must be supplemented considerably when definite action is taken.

A linguistic survey falls into three stages as follows :

- (i) the preparation of a rough list or survey of every language and dialect spoken in the province ;
- (ii) the systematic collection of records of every language and dialect contained in the first preliminary list ;
- (iii) the examination and comparison of the records so collected by philological experts, and the classification of each distinctive form of speech into its proper group, class, sub-family and family.

The first list should be prepared from returns supplied by local officers, missionaries, merchants or any other persons who would be likely to give information. The duplication of the same languages under different local names does not matter at this stage. Indeed, it should rather be welcomed. The object is to get the widest and most comprehensive list of the languages and dialects spoken that can possibly be made. The list should be prepared in two forms, geographical and linguistic. In the first list should be a record of each language and dialect spoken in each district or state and the estimated number of speakers. Separate type should be used to show (i) indigenous forms of speech, (ii) those spoken by non-domiciled immigrants. The second, or linguistic list, should be prepared from the first on the system of a reversing index. It should contain every language and dialect, arranged as far as is known, according to its family and group, with a record of each local area in which it was spoken. These lists would form the basis of subsequent scientific inquiry and analysis. Their preparation would need local knowledge, but no acquaintance with philology would be necessary. They would merely represent the opinion of an ordinarily intelligent person as to the languages spoken in the district with which he was familiar. They would be names, and without subsequent scientific enquiry could be considered as names only.

The second stage would have to be prepared by linguistic experts. It would involve, for each dialect in the first list, the collection of records of (i) one or more legends of the people whose language was being recorded, with the necessary translation ; (ii) translations of standard set English pieces into the vernacular ; and (iii) supplementary notes on grammar and syntax. The records would be both literary and phonographic. The literary records would include both the vernacular script, and an accurate transliteration into Roman script. One of the standard set pieces for the Linguistic Survey of India was the Parable of the Prodigal Son, specially chosen because it gave the greatest possible variety of grammatical inflection in the minimum space. It would, of course, be adopted for the survey of Burma.

The third stage would comprise the examination and comparison of the records so collected by philological experts and the allotment of each dialect to its place in the classified scale of languages as a result of such examination.

#### FEASIBILITY OF SURVEY.

In considering the possibility of effecting such a survey in Burma it is necessary to consider only the question of stages (i) and (ii). As for the third stage, although it is highly probable that the philological experts whom we have in Burma would be called upon to assist, it is certain that it may have to be conducted largely with extra-provincial supervision and assistance. I shall therefore only consider the possibility of conducting stages (i) and (ii), or rather stage (ii) since the first stage is purely routine and mechanical. In my opinion the success of this stage is greatly enhanced by the existence of the Burma Research Society. I have already alluded to its labours above in paragraph 4. From the statement attached to that paragraph it is clear that the Society is already, on its own initiative, undertaking tasks very much on the lines the

survey would proceed. But it has not the resources to carry out unaided the gigantic task which is herein suggested. Speaking from a purely personal point of view, as a member of the Society, I think that it would be pleased to place its resources at the disposal of Government and take an active share in a task which would involve so high a degree of research. It certainly would be of great value in advising in the selection of the investigators for the second stage of the enquiry, as well as in supplying lists for the first stage. The co-operation of the Society would ensure that the investigations would not degenerate into a formal routine, reluctantly performed by an official in addition to his own duties, selected because he happened to be the only officer available on the spot.

Of course in many instances the local officer would be the most capable investigator available. The following statement compiled with the help of the latest Civil List (1st January 1914) indicates that there would be numerous and enthusiastic officers to be relied on for valuable service.

Group.	Language or dialect.			Number of officers who have passed text examination.
Kuki Chin	...	Siyin	...	19
		Chinbok	...	3
		Baungshe	...	13
		Haka	...	1
		Tashon	...	9
		Khami	...	3
		Chin	...	13
Kachin	...	Chingpaw	...	91
		Tsi	...	1
		Maru	...	24
Lolo	..	Lisu	...	2
Burma	...	Burmese	...	2*
Sinitic	...	Pwo-Karen	...	7
		Sgau-Karen	...	12
		Taungthu	...	12
		Karenie	...	4
Tai	...	Shan	...	{ 23†
		Siamese	...	41
Malay	...	Malay	...	4
Mon-Khmer	...	Talaing	...	10
Palaung-Wa	...	Palaung	...	4
		Wa	...	3

\* Higher Proficiency.

† Higher Standard.

‡ Lower Standard.

But though this list is sufficiently comprehensive to show that the second stage of the survey is possible, the assistance of non-official investigators would be needed in many directions ; and I would suggest that the Burma Research Society could give valuable assistance, both in advice as to the selection of such investigators, and in assisting the supervision of the work they would be called upon to perform.

Finally, if I may be pardoned for what I feel to be extreme presumption on my part, may I suggest, that the most powerful argument for the urgency of the linguistic survey of Burma is the fact that the services of Sir George Grierson are now available. He has brought the linguistic survey of India as originally planned to a successful conclusion, and I cannot refrain from expressing my opinion as to the great advantage to Burma of having the final stage of the operations conducted under his supervision. Were I to omit this consideration, I feel that I should not be doing justice to my subject, nor making a true presentation of its relevant facts. Without any further apologies, I would submit that from whatever point of view the proposal is examined, whether from consideration of the administrative and scientific advantages to be attained, or of its continuity with, and its completion of, the Linguistic Survey of India as already carried out, or of the possibility of carrying through its various stages to a complete success, the case for a linguistic survey of Burma is overwhelming.

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## THE KALOK DANCE OF THE TALAINGS

The kalok dance is a family common occurrence in Talaing villages and yet I am not sure that the thing itself or the beliefs of the people connected therewith are at all generally understood by the outsider. I do not remember to have seen any adequate account of the cult. I propose in this paper to give a general idea of the kalok and describe an actual dance as witnessed in a Talaing village on the Meklawng river, in Siam. As the dance and the beliefs behind it are quite distinct from anything found amongst the Siamese, there need be little fear of introducing matter that has been added on the foreign soil. As far as I know the only people in Central Siam who have anything like the kalok dance are the Cambodians, the somewhat removed kinsfolk of the Talaings.

Before attempting any description of the dance itself it may be as well to make some observations on the subject of the kalok generally. The word ကောက် (kalok) is often used as a synonym of ဒေဝတ္ထု (dewatau) the Talaing form of the Indian deva or devātā. Dewatau, however, is mostly used only of benevolent sprits as the ဘုမ္မဇိ (bhūmmajuiw) ရူခုၣ်နှိ (rukkhajuiw) အကာသနှိ (akāsajuiw) the guardian spirits of the earth, the trees and the air and Talaings generally hesitate to say that any kalok could be called dewatau. The latter might in fact be used as the equivalent of our English word 'angel.' It is perhaps even wrong to have translated 'devil' by ကောက်မာ (kalokmā) as Christian writers have done. It would be more in accordance with Talaing usage to translate ဒေဝတ္ထုမာ (dewataumā). Kalok again is used of the pretas and bhūtas or spirits of the dead. The kaloks which are said to haunt graveyards are such. The word is also used of the rākshasas who disturbed the early settlers in the coast towns, and who are apparently to be taken as the aboriginal inhabitants of the country. Sometimes as in the case of the rākshasas who opposed the first Buddhist Missionaries to Thatôn they are called kalokdāk ကျွန်းမှု "water demons." The Sanskrit rāksasa is represented in ရကို့စ် (rakuuh) or လကို့စ် (lakuuh) 'ogre' or 'demon' popularly pictured as having long eyeteeth and reported to eat human flesh.

Kalok, however, is used by the Talaings in quite another sense. It is popularly used in the sense of 'sept' or 'clan,' and indicates a division or subdivision of families who are not known by a common surname as amongst the Chinese or bound to obey a common chief, but who are banded together by having a common house spirit, ကျွန်းဘို့ (kalok sii) A person is said to be of the same kalok as another just as one would speak of two different individuals belonging to one clan.

The altar or shrine of the kalok spirit is kept in the house of the recognised head of the group of families. This is usually the eldest of a family of brothers whose children and grandchildren are growing up around them. The requisites for the kalok shrine called အပေါ်ကျွန်း (apot kalok) consist of articles of clothing and adornment kept in a basket hung on the post at the south east corner of a house of the Talaing pattern. This post is called အယိုင်ခရီး (dayuii kharamii), which in the absence of any thing better I translate "sacred post." The articles vary for different kaloks. These kaloks are sometimes known in Talaing villages in Siam by the names of well-known districts in Burma, from which it would seem as if these kaloks pointed to regular tribes or clans of wider extent than those which obtain nowadays. It may be remarked in passing that the Talaings may be described as clannish in the ordinary sense. Perhaps the clannish spirit is more evident amongst them in Siam than in Burma.

A point of some importance in connection with the kaloks is that marriage is not permissible within the clan. A man must seek his wife from a different kalok than this own. The Talaings are thus exogamists in principle. If as we suppose, the kaloks were originally of much wider extent, it would be exogamy out and out in the olden days. The reason that exogamy does not show more prominently at the present day is, that there is a practice of hiving off to form new kaloks. When it becomes inconvenient for families on account of distance or otherwise to repair when need arises to the house which is the head of the kalok, and it is desired to form a new group, those who wish to make the new departure must come to the original shrine and get exact copies of all the articles. The same colours and patterns must be used and the kalok sii must be treated in the same way as before : it is the same kalok.

At a marriage in a Talaing village on the Menam, I saw a custom which seemed to me to point back to the exogamic practice. When the bridegroom and his friends came to the bride's house they found the garden gate guarded and were not permitted to enter the enclosure until they could give a satisfactory account of themselves, nowadays it is a piece of mere fun and an occasion of getting a few coins from the party, but it struck me that the practice of mounting guard, မင်္ဂလာ (maikai) might have its origin in a time when each kalok had its own separate enclosure and exogamic rules were more strictly enforced.

Another point of interest is that the kalok follows only the male line. Women are not counted in the succession. A woman when she marries goes over to her husband's kalok and children follow their father's line. The women are said to be ကိုယ် (lumtā) which appears to mean that they cannot transmit the kalok to their progeny. A curious ceremony has to be performed under certain circumstances on their account. The women and her husband must come when desired to the house which is the head of the kalok with an offering consisting of uncooked rice, both common and sticky kinds, cocoanut, sugarcane, plantain and other food stuffs. Before entering, however, they must go round the house three times keeping the house on their left. This in Talaing is ပဒ်သိန်ပါ (badak suinpi wā) "making the daksina three times." This going round the house has to be done in a particular way, however. They must bring a fish ကျေးမှု (ka kanan) "the banded snakehead," of the size of one's wrist, with a cord fastened to its gills and must draw it round the house to imitate leading a buffalo. On each round when the ဆွဲခံခဲ့ (dayuiñ kharamñ) is reached a stop is made and apparently a question asked. In Siam it is something like *dī ma nī dawk*. On the third round it is understood that satisfaction has been given and the fish is afterwards taken up into the house and cooked. Offerings are made and the food eaten. This is no doubt the rites referred to in the Burma Census Report 1911, Part I page 149 in section 132 headed "Totemism."

It is apparently the deference due to the kalok sii which is reason for some rather stringent rules, bringing about a state of things which results in apparent callousness on certain occasions. A woman in pregnancy is not permitted to enter the inner apartment of a house other than her own on any account whatever. She may go up and sit on the verandah or even enter the outer room, but she must on no account lie down in any part of the house, not even in the open space at the top of the stair. If a woman is about to be confined, unless she is a member of the family by marriage or otherwise she is not allowed to remain. If the people of the house are relatives they build a lean-to shed for her use during confinement.

Similarly when a person is brought home suffering from an accident of any kind, all bleeding must be stopped and the wounds properly dressed before the sufferer can be taken up into the house. Rules for both these cases are found

in the book Lokasamutti and I have seen instances of them being carried into effect in villages in Burma, just as they are followed to the letter in Talaing villages in Siam.

In the building of a house even, the requirements of the kalok must not be forgotten. The ridge pole ought to run east and west and the stair should have five steps only and have one support longer than the other. The house generally faces the north but the stair may be placed in any convenient direction except the south. The houses at Zingyaik as described by Mr. Cooper in Vol. III, Part I page 7 of the Society's Journal correspond to the directions laid down in the book Lokasiddhi. The same placing of the houses may be seen in any Talaing village in Siam. They are in fact on the Mon pattern evidently.

It is time, however, to turn to the description of the dance. Certain points in the cult will emerge as we proceed. I am going to describe an actual dance which I took the trouble to see through to the end. The dance began about nine o'clock in the morning and lasted till five in the evening and things were kept going all the time except for a short interval for dinner between one and two. I have a list which I will here give of thirty two different items in the programme some taking longer and some shorter time.

Kalok Dance at Kwān Lamān (potter's Village) on the Meklawng, Siam.

1. Doi dances and makes an offering.
2. The Kalok requisites brought out.
  - (i) Examination
  - (ii) Pouring of water
3. The first dance by the women the second queens.
4. Caging the kalok.
5. Doi walks the woods.
6. Cutting the Plantain tree Pleū antarāai (releasing the misery).
7. Ceremonial bathing of the sept.
  - (i) Bathing the offspring.
  - (ii) Bathing the stem.
8. The second dance. The chief queen.
9. Dancing the kalok.
10. The kalok becomes a monk.
11. Lighting the candle of witness.
12. Doi dances to put the kaloks on an equal footing.
13. Two women dance in character of men.
14. Dance by three women.
15. Another dance by two women.
16. " " one woman.
17. Biting the fish.
18. Playing the young Indian Prince.
19. Eating the fish.
 

Interval for dinner.
20. Kalok eats sticky rice and juggery.
21. The Tavoyan kalok.
22. The Karen kaloks.
23. Dance for the householder
24. Fighting the game cocks and catching the elephant.
25. The kalok of the north.
26. Eating the Tortoise.
27. Dance of the kalok sūi.
28. Returning the cords.
29. Breaking the cocoanuts.
30. Playing the bau ju.
31. Floating the canoe.
32. Gathering the offspring and examining the candle.

The kalok dance is usually the result of a vow or promise made when a

member of the family is sick and an appeal is made to the kalok. Briefly the appeal is in these words: ကျော်တူဘိၢက့ုမ္းယဲညီ။ အဲလေတိကို။ ပိုင်ဝိုင်ပမိပိသိနာရ၏။ (kalok tala sñi kuiw blah yai ni ai leh kuiw puiai weñ gruin pa mip suñ arak ca kwñ). "Oh spirit lord of our house, give relief from the sickness, and I will institute a dance in your honour. We will laugh and play, and make rejoicing in drinking and eating." In the case before us the patient had died, but the promise was held binding.

The dance is called လေလိကဏာ (lehkanā) "a dance in a pavilion" or လေလိကော် (leh kalok) "dancing the kalok." ကဏာ or ကာ is the equivalent of the Pali *māyapāni*, Bur. မဏ္ဍဝါ. The kanā is of oblong shape with the roof coming down on four sides. At the dance I am describing the centre of the roof was raised a little. The doorway is toward the west and is partly in the roof, the latter being somewhat low. The door of bamboo and leaf is opened upward and being supported by two bamboo poles gives the appearance of a vestibule or porch. There are no walls and entrance may be made anywhere. The actors in the various scenes, however, enter and leave by the door. In the centre is a raised platform for the dancers with a canopy. Just behind that and much higher is a rack of bamboo framework which is used to place the various offerings after the regular dancing has commenced. The musicians are seated on mats on the right of the platform. The vestments are kept in a basket on the left. The women folks with their children also sit there on mats ready to hand things and render any assistance.

The presiding genius of the day's doings is the ဒေါ် (doñ) or medium representing the kalok and knowing all the requirements. In this case the doñ was an elderly female. She introduced all the business and started the dancers and was on duty the whole day. A male doñ from another village happened to be passing and coming forward entered the kanā and sat down on the platform beside the presiding doñ, remaining there and partly assisting for some time. He afterwards begged leave to go on his way, making the excuse that he had to attend to some business of his own. There seems thus a fraternity recognised amongst the doñs.

Another important personage is အခာဗီတိ (acā bāt) the leader of the orchestra. He shares with the doñ a knowledge of all the requisites for the dance. He has to understand the changes necessary in the character of the music as the dance proceeds. He seemed to play on any instrument as need arose. He takes his designation from အခာဗီ (Sans. ācārya) 'teacher' and ပါတ် (bāt) "a musical instrument." The instruments are ပါဝါကောနှစ် (bāt kon cah) an arrangement of ten gongs in almost circular frame standing upright; ပါတ်တော် a low box with ends gradually rising from the centre and having a graduated series of bamboo slats fastened to two parallel cords along its length; four drums ခံ (pham) of different sizes; a clarionet ဘုံ (haw); and small cymbals ဘော်. Bamboo clappers ကား (kaba) are used, but these are played by any one apparently.

As soon as I heard the music begin I stepped from my boat and made my way to the place. The doñ was dancing in front of the booth with a sword in each hand. She afterwards took up a little offering in plantain leaf and carrying it forth threw it away. This apparently was the opening ceremony.

The next item was the bringing forth from the house of the *apot kalok* or kalok requisites. The old woman of the house addressing the doñ said "See, they are all new; look and see that everything is there." On a brass tray were a number of fresh clean garments neatly folded and on the top of all was a gold ring set with rubies. On the top of these were now placed a large candle

and a garland of flowers. The families were called in and the males, men and boys, came forward and held up the tray whilst the doi<sup>n</sup> poured underneath first water, then the liquid from a cocoanut and afterwards some spirits, repeating some words the while. It was impossible to hear the words for the music and noise, no one seems interested in what is said. Then a collection of foods was held up and water dropped all round from a cup formed of plantain leaf. An old woman afterwards distributed the eatables amongst the boys.

Preparations were now made for the actual dancing of the kalok. The trays and dishes containing cakes, plantains, cocoanuts and other articles for use during the day had hitherto lain on the dancing platform. These were now put on the rack behind ready to be taken down when needed.

For the first dance a woman entered and was dressed up in old fashioned garments kept for the purpose. These consist of the old style ganin ဂနိုင် or skirt open up one side still to be seen in Burma when old women are dressed for special occasions, and scarves for throwing over the shoulders. For the dance the ganin is fastened with a band at the waist and scarves are loosely thrown over the shoulders. These garments are put on over the ordinary clothing, and are always in the pattern brought over by their forebears from Burma. This woman was taking the part of ဂဏျုပ်ဒေဝါစ် (gana kyūk dot) "the second queen." At first she postured and made slow movements with hands and arms in imitation of the doi<sup>n</sup>. Then she became more lively in movements and seemed quite excited. This is the stage when it is said, ကျွော်လွှုံ (kalok lup) "a spirit has taken possession." The doi<sup>n</sup> now stops her own movements and hands the woman first two bunches of leaves, then two shields and lastly two swords. These the woman brandishes as she dances and then hands back to the doi<sup>n</sup>. She continues to dance with free hands and the doi<sup>n</sup> has leisure to rest or make preparations for the next matter in hand.

The next item was the caging of the kalok, the brass tray on which the kalok vestments had been presented was now placed in a garment slung from a pole in the way in which a baby is cradled. The tray contained the looking glass, the comb and the tail of false hair. This I was told was caging the kalok ကြိုင်ကွေး (kruin kalok), who had been brought from the house and was now to be here all the time of the dancing.

The doi<sup>n</sup> then strutted forth with sword and horn to walk the forest. The forest is represented by a branch of the eugenia tree, ကျောင်းကြီး (knūnkrei), the Burmese သင့် stuck in the ground outside the shed opposite the door. She first kneeled before the tree and placed a small offering of food on plantain leaf. All round the offering she poured water by simply allowing it to drop from the small end of the horn which was perforated. She then rose and went round the tree three times keeping it on her left (daksina cf. page 94) plucking a leaf and putting it into her horn each round.

The cutting of the plantain tree was the next item. A young plantain entire with root part and crown of leaves was brought into the booth carried in a horizontal position with the leaf end first. All the males pertaining to the kalok had to bear a hand in carrying it in, whilst the doi<sup>n</sup> held it at the leaf end walking first. It was laid on the dancing platform and one of the men proceeded to shave the head or root part which just extended over the platform, the shavings dropping into a brass tray below. The doi<sup>n</sup> then put some powdered saffron on the head and pouring water over it rubbed with her hand as in bathing. All the males put forth a hand in turn and helped. Next the doi<sup>n</sup> took some parched rice and throwing it down the males all took it up in handfuls and threw it toward the plantain stalk. The doi<sup>n</sup> then made little incisions in the stem with a sword cutting toward the top every time until she reached the leaves, when she turned and made an incision in the direction of the head. One of the men was now instructed to cut the stalk into pieces at the places marked by the doi<sup>n</sup>.

This plantain stem was to represent the dead on whose account the dance was made and the rite is termed ပွဲနအန္တရာ (pleñ antarāai) "releasing the misery."

The rite which followed next was rather interesting and was apparently an essential part of the procedure. This was the ceremonial bathing of the sept. First there was the "bathing of the offspring ပူလှမကောန်စံ (baluip kon cau). A jar of water was placed by the eugenia branch outside, and the old woman who was giving the feast sat down beside it with a dipper. All the members of the different families first men and boys and then women and girls came in turn and held out their hands whilst the old woman poured water to wash them. As each completed his or her hand washing the doi stood by and slipped a ring of cord on the right hand. Some of the little boys had it slipped over their heads and wore it on their necks whilst the others wore it on the wrist. This was to distinguish them throughout the day as members of the sept. Then the old woman had water poured over her body and had a bath in the usual eastern way. This was called ပူလှမဖွံ့ဗော် (baluip bo' kalok) "bathing the stem of the kalok." Whilst the bathing was going on two women stood at the entrance to the booth holding a silk scarf stretched between them, apparently as a screen. The old woman having changed into dry garments was robed as the chief queen ဂုဏ်နွှေး (gana kyāk jnok).

For the dance of the chief queen the doi arranges foods—cakes and plantains—in two little bowls and a plantain leaf. A candle is lighted and stuck in the latter and water poured round the leaf. Then she transfers the candle to one of the bowls and pours water round the whole three. Having done this she blows out the candle and folding up the leaf places it under a corner of the mat which covers the platform. The two dishes were placed near on the mat. She then takes a folded yellow cloth with a large candle and a garland of flowers and waves them before the old women three times, the articles being circled round the rack each time. The old woman is then made to swing a basket containing the articles together with a plantain leaf and bamboo stick holding by the supporting cord ဖုက်ပလေ (juk palai) a cloth hanging from the roof by which the dancers support themselves in falling before the doi at the end of a dance. The old woman then takes the basket on her palm with the end of the supporting cord underneath, moving it about and swaying the body. She afterwards dances in the usual way with leaves and shields and swords. The music becomes lively and the old woman responds to it.

The old woman again puts off her queenly robe and is attired in the kalok garments. Offerings are again prepared by the doi. The outstanding feature of this item is the raising of two brass trays, a big and a little one, each in turn three times, the doi transferring the looking glass and comb from the one to the other as she hands them to the woman. Then the dance as before. The old woman is not, however, finished yet by any means. The doi takes a bowl with lighted candles and passing them over the rack gives them to the old woman who stands up to take them and sways about. Then she receives in turn the tray and the betal box in the same way. This is followed by another dance in which a spear is added to the other weapons.

The old woman again changes and dresses for the part of he kalok becoming a monk. There is not much in the part that resembles monkhood at all. She first holds on by the supporting cord, then swings the swing—လားဟျော် (lahuai jun ja). The *jun ja* is a brass tray hung in a cloth. She takes from the doi a water basin and removing the monkish robe—ရှိဝိယ (rām tit) takes to weapons and dances with swords.

The candle of witness ပွဲနတိုင် (pnāñ tuiñ) or ပွဲနသကိသီ (pnāñ saksi) was now lighted. A tray with cocoanut, plantains, cakes and spirits was taken

and little candles lighted on its edge. A large candle was made ready by sticking it into a small chatty filled with cleaned rice. The doi waved the tray before the old woman, who still retained her place on the platform, lighted the large candle and passed the tray over to the musicians, who divided its contents amongst themselves. The lighted candle was then placed on the rack and guarded from the wind by a casing of plantaing stalk laced with rattan.

The kaloks or ghosts of the ancestors of the sept were now said to be all present and the next item was a dance by the doi to put all on an equal footing. This is called ခေါ်ကျော်ဆုံးလဲ (leh pñi kalok gamluiü) and apparently means that the ghosts are all given an equal opportunity of taking possession of the dancers and so showing their continued interest in the living. One woman dancing later hopped and skipped out into the open and going up to the old lady who was giving the feast hugged and kissed her. This was an indication that the ghost was that of the dead husband. Another was recognized by some of the men as an uncle. Some of these single dances are done quite gracefully. It is not all a swaying of the body and wreathing of the limbs as in the ordinary Burmese and Siamese dancing. There is hopping and skipping and moving about and sometimes the skipping is very graceful. When coupled with the lively music I can quite understand spectators entering into some kind of enjoyment of it. And yet there is little evidence of people being there for mere enjoyment. The doi's movements when dancing with the spear on this occasion were specially good. She held it up with her two hands its point being towards the rack with candle and offering. With one hand she held the shaft and with the other the blade covered with a cloth. She changed it from side to side by passing it over her head.

The next dance was by two women in the character of men. They simply fastened a loin cloth male fashion over their own garments. This caused one of the men sitting by to remark that whilst the kalok followed only the male line, it always fell to the women to do the dancing.

Several dances now took place in which one, two or three women engaged. The doi always commenced by preparing a little offering and pouring out spirits, and sometimes smelling the offerings. The doi postured and made movements which the women imitated as best they could. The doi seemed to exercise some kind of magnetic influence. I saw a woman, one of three, who seemed fascinated. Then she took her gaze away from the doi and looked as if she would shake herself free, but she again turned to the doi and soon was in a tremor; finally springing to her feet she began to dance. Some remained cool and collected and never gave way to the frenzy, others again after dancing in a frenzied state for a while went out and brought in others. These they sought to excite by moving their arms about and causing them to hop and skip. Some became excited like the other dancers and danced away till the excitement wore out. Others again were unmoved and just fell out again when they were left free. Sometimes there were eight, nine, or ten dancing all at once, though never more than three started the dance. On finishing dancers always danced into the booth and ended by grasping the supporting cord and falling down before the doi. One woman sprang up again and danced madly until an old dame sought to quiet her, and managed only by forcing her to her knees before the doi and holding her down for a little. This excitement is one of the strangest things about the dance. The dancers most susceptible to it seem held in thrall for the time being, yet the doi shows no sign of exerting any power over them.

A curious thing in the day's proceedings is the biting of the fish. A fish with a stick through its length, having been roasted on the coals, was brought to the doi, who having smelled it examined it and called for some one to bite it. The men were all called afterwards and each was told to take a bite of the fish in turn. Some simply broke off a piece with the teeth and threw it down. It did not seem necessary to eat it.

In the next turn ၁၀၂၃၅၇၈၀၀၁၁ (wei smiu blāai galā) playing the young Indian Prince two little fishes are used. The doi herself dances in the character of the prince wearing a loin cloth male fashion over her own dress. One of the men of the sept comes forward to the platform and kneeling on the ground holds up a basin containing offering before the doi, who after throwing a folded cloth over the man's arms takes two little fishes from the basin and sticks them on the points of her two swords. She flourishes them and then taking off the fishes puts them down again. She then takes a sword in one hand and a comb of plantains in the other and having flourished these puts them down and afterwards dances. Next she goes out as the prince to meet his lover, and having found her in the forest, the two pledge faith by pouring water, and return home, that is, enter the booth. Here there is more pouring of water with sprinkling of the body, manipulation of the large and small tray as in a former item, the kalok things returned to the cage and the woman playing the princess dances in the usual way.

The doi next performs the ceremony of eating the fish. She prepares a tray with cakes, etc., and a bigger fish. The music begins and she postures seated and again holds the two little fishes. She smells the fishes, then the cakes and things on the tray. Next she stands up and dances flourishing the swords and the music quickens. She afterwards removes everything from the tray except the fishes, veils her face and head, and going through the ceremony of eating the fish behind her veil, finishes dancing.

In the next item, ၁၀၃၂၉၈၄၆၅၇၅၈ (kalok ca kamleji kuiw kaw) "the kalok eats sticky rice with jaggery," a woman dances in the usual way and then coming down from the platform with a tray in her hand goes about stuffing the children's mouths with the rice dipped in jaggery. ဗုဒ္ဓကျေနှစ်ညး (ñah phyuim kon cau ñah) "she feeds her grandchildren." She is an ancestor interested in her progeny.

There was nothing out of the usual about the Tavoyan kalok, but with the Karen kaloks it was different. As the Karens are jungle people this dance could not take place in the pavilion. So three women having dressed in the character fared forth to the woods one carrying a small basket of the Karen pattern, another water in a joint of bamboo, and the third carrying two swords. The first woman whose basket\* was filled with little cakes and other edibles went round feeding the people, the doi coming out to help by dividing out and refilling the basket. Silver bracelets were now brought and clasped on the wrists of the dancers, one of whom was now greatly excited and it was with difficulty the bracelets were put on at all. This was the longest drawn out of all the dances, eight or nine dancing all at one time. This and the next were the most exciting performances of the day.

The next was a dance on behalf of the old dame who gave the feast. Two women commencing in the usual way by and by dance out bearing trays, and distribute cakes among the people. One of them being herself greatly excited brings others in and soon there are nine or ten all dancing at once.

In fighting the game cocks two women holding cloths knotted to represent cocks commence in the usual way and afterwards dance out into the open. Here a man bribed with promises of drinks comes into the arena and capers about. Bottles filled with country spirit were handed about and always as he stopped to take a drink the two women came at him trying to catch him. This was ၁၀၃၈၃ (bak ciñ) "hunting the elephant." She eventually caught him by throwing their scarves over his head and leading him to the eugenia tree.

The rite of eating the tortoise is a reminder of one of the peculiar traditions of the Talaings. It was reported that this particular tortoise was not sufficiently cooked, but it was ordered out just as it was. It was brought in a plate shell and all and placed before the doi. Two women sat in front in the dancer's place. The doi poured water and poked at the flesh and smelled it. The tortoise was then raised up and formally offered to the kalok sñi. It was then taken back to

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\* The Karens are noted for their ungrudging hospitality and this may allude to it.

the house and would be eaten later, I understand. One of the women now carried two combs of plantains on a stick over her shoulder, whilst the other carried two swords and the *doi* grasped the spear. The two women then danced in the usual way.

There is a reference to the tortoise tradition in the Census Report at the section on Totemism cited above. 'Turtle,' however, is wrongly used for 'tortoise' somewhat to the confusion of meaning. If a Talaing sees a tortoise and it is not possible or convenient for him to take it home and deal with it properly, he must say, "It smells" or "It is rotten" and pass on. If, however, one does reach home, it must be cooked and an offering made to the kalok before any one partakes of it. The offering should consist of the head of the tortoise and the head or top part of the rice in the pot. Sickness and death are believed to follow any infringement of the rule. So too one Talaing may not ask another Talaing for a tortoise, when he has a use for one; he must simply go and take it, if he judges it well to do so.

In the dance of the kalok *sni* the old woman of the house again took the part. She dressed for it in a *putso* ရွှေ (glik). It was somewhat scant in width, but it was put on in the usual way with the free end drawn round the shoulders. The *doi* prepared a basin of parched rice with candles burning. This basin was afterwards overturned and the rice spilled out. This was called ပာပန်မြင့် (pa bakap kamleñ) "performing the overturning of the sticky rice." The two old dames then sat down to a game of gane' ခေါ်ဝေး (wen gane'). The gane' Bur. ရန်ပွဲး were little pieces of plantain fruit. These the two simply threw to one another.

It was getting near the end now and all were called in to give up their cords, the *doi* taking them back.

The remaining items were performed outside the booth. Breaking the cocoanuts and playing the *Bau ju* or gardian spirit of the village seemed pretty much mixed up. Two women danced and the two cocoanuts being laid near, one of the women by and by took up one smashing it on the other as it lay on a plank. The little boys rushed in to seize the pieces, but the woman took up the remaining whole one and raising it up brought it down with a smash on the plank. The boys then scrambled for the fragments.

Floating the canoe was the last item really. A model of a canoe was made on the spot of plantain stalk and placed with other things in a tray. A youth stood by with a bamboo pole, a sun hat and a jacket. Whether this was intended to symbolise the desire of these exiles to return to the land of their fathers I do not know, but that was about the way they put it to me.

Examining the candle does not appear to be any real part of the rites, but it seems to be expected, and the prospects for the year are held to be indicated by the way in which the candle burns down on the grains of rice. The leader of the orchestra it was who read the signs. The pot of uncooked rice in which the candle had burned was handed down to him. He looked at it earnestly for sometime and then said that it would be a fairly good year. Any work or business undertaken to the east, the west, or the north would be successful, but toward the south it would not be so. As far as I could see this was said because the grains of rice around had been evenly scorched when the candle burned low except in the one direction indicating the south. A little stick marked the west.

A good deal of country spirits was used during the day and a great many cocoanuts were opened for the water they contained. As it is held that the frenzied dancers represent the ancestral ghosts whatever was asked for was at once handed to them. I was assured that whatever they ate or drank made no difference to the dancers; it was the ghost that was benefitted. The women therefore could not become intoxicated. Some both drank themselves and forced it on their male friends.

R. HALLIDAY.



## HINTS ON THE STUDY OF THE BURMESE LANGUAGE

I.

Burmese is an important member of the Turanian family of languages, Southern Division ; it is Radical or Monosyllabic, with a tendency to advance towards Terminational or Agglutinative forms. It has produced a considerable literature and is the recognized medium of communication throughout the province of Burma. It has no inflections, no declension and conjugation ; it makes no formal distinction of the various parts of speech ; in fact, it possesses no word for what we are accustomed to call 'grammar' (Pali, *saddā* ဆုတ္တ). The Burmese language exhibits no terminal distinction at all. The plural is formed by placing များ or များ (which means 'many') after the substantive ; the past and perfect tenses are formed by placing ပြု and ပြု (which means 'finished') after the verb. ပဲ or အပဲ is used to form the future. The root or its offshoot is never obscured : every root is a word. One of the most characteristic features of the Burmese language is that it never admits closed syllables. A non-English speaking Burman finds it impossible to pronounce *school*, or any other word ending in a consonant *School*, as pronounced by him, becomes *Sakū* စကူး. The pronoun of the first person is not a pronoun at all ; it means 'male servant or female servant အေး အေး, အေး အေး အေး အေး' e.g., အေးတော်ပြုသမီးအေးနှင့်ပြုသမီး etc. A pronoun may be left out in conversation, e.g., ဘတ်ရို့သွားပဲလိုပဲရို့သွားပဲလိုပဲ. There are many words which have become obsolete, but some of these archaic words are still used by modern writers as an embellishment. The history of the Burmese language consists in the gradual increase of Pali and Sanskrit words, which crept into the language since the introduction of Buddhism into Burma ; and these imported words have changed the whole native aspect of the language. The Burmese language may, therefore, be classified as follows :—

- I. Archaic Words (ပါရာကုသာ)
  - II. Pure Burmese
  - III. Pali or Sanskrit Derivatives.

### I. Some of the archaic words are shown below :—

A complete Burmese-English vocabulary of the so called *Porāna Katha* is I understand, being compiled by our indefatigable and learned Editor (Professor Maung Tin, M.A.)

II. The following are some of the pure Burmese words which are used at the present time:—

Pure Burmese words are mostly monosyllabic, and their significations are distinguished by means of different intonations or modulations. For instance,

ଓସ to put on	୧୦ to begin
ଓସି to be comely	୧୧ to be shrill
ଓସି: to tighten	୧୨: to eat
ଓସି to kick	୧୩ to support
ଓସିବାକୁ to make a division	୧୪ to be hard
ଓସିବାକୁ: to be blind	୧୫: to be towering

There are many equivocal words, i.e., differing in origin and becoming identical in form, e.g.,

There are also many words expressive of immaterial conception which are derived by metaphor from words expressive of sensible ideas, e.g.,

These words may be called "offshoots of roots." All roots are expressive of sensuous impressions only. The late Professor Max Müller has rightly said "No advance was possible in the intellectual life of man without metaphor." Cases of metaphor, both radical and poetical, are numerous in the Burmese language. There is a constant change in every language, but no man can either produce or prevent it. The growth of language comprises two processes, viz., (1) Dialectic Regeneration and (2) Phonetic change. The following extracts from inscriptions collected and published by the Local Government will indicate that the Burmese language has undergone much phonetic change :—

SAKA ERA 420 (1058 A.D.)

SAKA ERA 537 (1145 A.D.)

SAKA ERA 611 (1249 A.D.)

SAKA ERA 749 (1387 A.D.)

SAKA ERA 846 (1484 A.D.)

SAKA ERA 908 (1546 A.D.)

SAKA ERA 1010 (1648 A.D.)

SAKA ERA 1137 (1775 A.D.)

SAKA ERA 1203 (1841 A.D.)

ଫେରାତମ୍ବାଗି ୦ ଦେବା ଶାନ୍ତିକାରୀ ଯାତ୍ରା ହୁଏଇଥିଲୁ ଛିଲୁ । ଗନ୍ଧାରୀଜୀଙ୍କ ଉଦ୍‌ଦେଶ୍ୟରେ ପ୍ରିଣ୍ଟିଂ ରେଝାର୍ଟର୍ସଙ୍କ ଦ୍ୱାରା ପରିଚାରିତ ହୁଏଇଲୁ । ଅର୍ଥାତ୍ ପରିଚାରିତ ହୁଏଇଲୁ ।

SAKA ERA 1226 (1864 A.D.)

These inscriptions will doubtless enable us to trace, step by step, the gradual changes of form and meaning from ancient to modern Burmese; and they shew

clarly that the Burmese language was gradually, by the combined efforts of succeeding generations, brought to that perfection that we find in the works of Shin Silavamsa, Shin Rathasara, Myawadi Mingyi, U Pönnya, etc. Before a systematic study of Burmese can be undertaken on a sound philological basis, we must, first of all, possess a list of roots. Chinese has been reduced to about 450 roots, and I dare say we want a smaller number for Burmese. It is to be hoped that in the near future a new Max Müller will publish a complete list of roots in Burmese arranged alphabetically with English translation.

III. The following are some of the Pali and Sanskrit derivatives found in the Burmese language :—

ଶାନ୍ତିଗତରା—Sanskrit ଅମ୍ରିତ Amrita	ଶାନ୍ତିରାଯ—P. ଶାନ୍ତିରାଯେବ
ପାଲି—Pali ସୁରିତ	ପାଲି—P. ପାଲି
ପାଲି—P. ପାଲି	ପାଲିତିନ—P. ପାଲିତିନ
ପ୍ରକ୍ରିୟ—S. Prakriti	ପାରିହା—P. ପାରିହା
ଚକ୍ରବର୍ତ୍ତ—S. Cakravarti	ଚକ୍ରି—P. ଚକ୍ରି
ଚକ୍ରବର୍ତ୍ତ or ଚକ୍ରବର୍ତ୍ତ—P. ଚକ୍ରବର୍ତ୍ତ	ଚକ୍ରି—P. ଚକ୍ରି
ଚକ୍ରି—P. ଚକ୍ରି	ଚକ୍ରି—P. ଚକ୍ରି
ଚକ୍ରବର୍ତ୍ତ—P. ଚକ୍ରବର୍ତ୍ତ	ଚକ୍ରି—P. ଚକ୍ରି
ଚକ୍ରବର୍ତ୍ତ—P. ଚକ୍ରବର୍ତ୍ତ	ଚକ୍ରି—P. ଚକ୍ରି
ଚକ୍ରି—P. ଚକ୍ରି	ଚକ୍ରି—P. ଚକ୍ରି
ଚକ୍ରି—P. ଚକ୍ରି	ଚକ୍ରି—S. Cakra
ଚକ୍ରି—P. ଚକ୍ରି	ଚକ୍ରି—S. Cakrama

Some Pali words are retained without any change, e.g.,

ପୂର୍ବା—ପୂର୍ବାରୀଲ୍ୟ	ପେଇ—ପେଇତାଃ ହାନ୍ତି
ଦିନିଯ—ଦିନିଯାରୀଲ୍ୟ	ଲୋକ—ଲୋକାନ୍ତି: ହାନ୍ତି
ଫେର୍ରା—ଫେର୍ରାରୀଲ୍ୟ	ତାଙ—ତାଙାନ୍ତି: ହାନ୍ତି
ଦେବରା—ଦେବରାରୀଲ୍ୟ	ଏକ—ଏକାନ୍ତି: ପି
ଦେବାଗ—ଦେବାଗାନ୍ତି: ରୀତିଲ୍ୟ	ଗୃହ—ଗୃହପିତା
ଦାନିଯ—ଦାନିଯାନ୍ତି: ଅନ୍ତିକଣ୍ଠାନ୍ତିଲ୍ୟ	ଦୁରତ୍ୱ—ଦୁରତ୍ୱମୟେତା
ଦାନକ୍ଷେ—ଦାନକ୍ଷେତ୍ରୀ: ଧୂର୍ମିଣି	ଦୁରପେ(ତ)—ଦୁରପେତ୍ଯହାନ୍ତି
ଦୁରପେ—ଦୁରପେତ୍ଯପେ: ହାନ୍ତି	ଦୁରତ୍ୱ—ଦୁରତ୍ୱମୟେତାନ୍ତି
ଦୁର୍ଗାନ୍ତା—ଦୁର୍ଗାନ୍ତାରୀଲ୍ୟ	ଦେବାଲାଭାଲ—ଦେବାଲାଭାଲପ୍ରିତିଦେଵାନ୍ତି
ଦୁରାଳ—ଦୁରାଳାଲ	ଦୁଲ—ଦୁଲଜାନ୍ତିକାନ୍ତି: ରୀତିପି

Burmese authors have a passion for deriving *all* Burmese words from Pali. For instance : they derive မျိုး, a pure Burmese word, which means a 'literary work' or 'treatise,' from the Pali word මාරු, which has the same meaning, and accordingly spell it မාරු; မိုး, which is doubtless a pure Burmese word, from Pali මෝ and spell it မෝ; and ဘဏ်, which is an English word (bank), from Pali පැන and spell it ဘဏ်!

It may be argued that it is impossible to imagine a Turanian language derived from an Aryan, or an Aryan from a Semitic language. In answer to this, it should be pointed out that no nation was ever so completely isolated as not to admit the importation of foreign words. Thus Turkish belongs to the Turanian family of languages ; it has now a large number of religious and political terms of Persian, i.e., Semitic, origin, since the Turks, accepted a Semitic religion after it had passed through a Persian channel. The Burmese language is likewise now overgrown with Aryan words, Pali and Sanskrit ; and the presence of these foreign words is attributable to literary and religious influence. No one can, therefore, thoroughly master Burmese without a competent knowledge of Pali and a little Sanskrit.

## BURMESE ASTRONOMY (continued)

BY  
THOS. P. de SILVA

### MARS' AND OTHER PLANETS' TRUE LONGITUDES (PHUTA)

The mean Sun is the Madhya of Mercury and Venus and the Sighra of Mars, Jupiter and Saturn (15).

First place its Sighra, in the middle its Madhya, and last its Manda. This is tabulated for better illustration as follows :—

Operation.	For Mercury and Venus.	For Mars, Jupiter and Saturn.
I      Sighra      ..	Mercury and Venus      ..	Sun.
II     Madhya      ..	Sun                    ..	Mars, Jupiter and Saturn
III    Manda      ..	Apsis                   ..	Apsis.

In the first and second equations the Bhuja-phala is to be taken half its value and the other two, their full quantity.

In using the Jya when it is not subtractable from the next Jya, deduct the next Jya from the foregoing Jya. The result of equation is subtractive from corresponding Jya.

When Khandanī is zero (0) multiply by first Jya.

For first and last equations use :—

When gola 1 and 2 Karakat Jya.

3 and 0 Makara Jya.

and in the two middle equations use Manda Jya.

When gola 0 and 1 Meshadi additive ; 2 and 3 Tuladi subtractive.

RULE :—FIRST EQUATION. From Sighra (in the first) deduct the Madhya (of the middle). With the difference, find out the Bhuja-phala (as shewn on page 33 Part I) using Karakat or Makara jya according to the Gola and taking half the value of the result, additive or subtractive, apply to the madhya of the planet (in the middle place) whichever is the signification of the Gola.

(15) The text of the Suryasiddhanta is :

"In respect of Mars etc, first, Sighra operation or operation of finding the first equation ; second, Manda operation ; third, Manda operation and fourth, Sighra operation, are to be employed successively."

This is in Burmese termed "Lai-jet-thai" or "Lai-phan-sin" i.e., four times operated upon or equated.

In order to find the true place of the Sun and Moon, a single process called Manda or operation of finding the first equation is employed and applied to their mean places.

But in the case of Mars etc., from the mean place of the planet the equation of the conjunction has to be calculated and the half of it to be applied to the mean place ; from the position thus obtained the equation of the apsis has to be calculated and the half of it to be applied to the longitude as already once equated ; from this result once more the equation of the apsis has to be found and its result to be applied to the original mean place of the planet ; and finally it has to be calculated from, and to be applied to this last place the whole equation of the conjunction.

SECOND EQUATION. From Manda (in the last place) deduct the result of the first equation. With the difference reduce to Bhuja-phala (as shewn on page 33 Part I) using Manda Jya and taking half of the result, apply it as additive or subtractive to first equation, whichever is indicated by the Gola.

THIRD EQUATION. From the Manda (in the last place) deduct the second equation. Reduce the difference to Bhuja-phala (as shewn on page 33 Part I) using Manda Jya and apply the result whichever the Gola indicates, additive or subtractive to the Madhya (in the middle place).

FOURTH EQUATION. From the Sighra (in the first place) deduct the third equation. The difference is reduced to Bhuja-phala, making use of the Karakat or Makara Jya according to Gola. Apply the result as indicated by the Gola, additive or subtractive, to the third equation.

For Rahu, deduct its madhya from 12 signs, the difference is the true place. Add or deduct 6 signs, the result is the true place of Kethu.

#### MARS' TRUE LONGITUDE.

Sunday at midnight mean position	<table border="0"> <tr><td>I</td><td>Sun</td><td>8s 28d 58m</td></tr> <tr><td>II</td><td>Mars</td><td>11 10 53</td></tr> <tr><td>III</td><td>Apsis</td><td>4 11 3</td></tr> </table>	I	Sun	8s 28d 58m	II	Mars	11 10 53	III	Apsis	4 11 3
I	Sun	8s 28d 58m								
II	Mars	11 10 53								
III	Apsis	4 11 3								
From Sun										
Take Mars										

$$\begin{array}{r}
 \text{From Sun} & 8s 28d 58m \\
 \text{Take Mars} & 11 10 53 \\
 \hline
 3 ) & 9 18 5
 \end{array}$$

Gola 3 and 0s 18d 5m deduct from 3 signs = 2s 11d 55m or 4315 Minutes Bhuja.

As 225m : 4315m :: 1 Jya :  $x = 19$  Jyas and 40m remainder.

Gola 3, use Makara : 19 Jya = 1611 } = 76m vivara  
 $20$  " = 1687 }

As 225m : 40m :: 76m :  $x = 13$ m which with the equivalent of 19 Jya = 1611 = 1624m or at  $\frac{1}{2}$  = 13d 32m and as Gola 3 signifies subtractive,

$$\begin{array}{r}
 \text{From Mars' Madhya} & 11s 10d 53m \\
 \text{Take Bhuja-phala} & 0 13 32 = 10s 27d 21m, 1st equation
 \end{array}$$

$$\begin{array}{r}
 \text{From Apsis} & 4s 11d 3m \\
 \text{Take 1st equation} & 10 27 21 \\
 \hline
 3 ) & 5 13 42
 \end{array}$$

Gola 1 and 2s 13d 42m deduct from 3 Signs = 0s 16d 18m or 978 minutes Bhuja.

As 225m : 978m :: 1 Jya :  $x = 4$  Jyas and 78m remainder

Manda : 4 Jya = 184m }  
 $5$  " = 227 }

As 225m : 78m :: 43m :  $x = 15$ m which with the equivalent of 4 Jya = 184 = 199m or at  $\frac{1}{2}$  = 1d 39m and as Gola 1 signifies additive,

To last equation       $10s\ 27d\ 21m$   
 Add Bhuja-phala       $0\ 1\ 39$  =  $10s\ 29d\ 0m$ , 2nd equation

From Apsis       $4s\ 11d\ 3m$   
 Take 2nd equation       $10\ 29\ 0$   
 $\underline{\underline{3\ )\ 5\ 12\ 3}}$

Gola 1 and  $2s\ 12d\ 3m$  deduct from 3 signs =  $0s\ 17d\ 57m$  or  
 1077 minutes Bhuja.

As  $225m : 1077m :: 1$  Jya :  $x = 4$  Jyas and  $177m$  remainder  
 Manda :  $4$  Jya =  $184$  }  
 $5$  " =  $227$  } =  $43m$  vivara  
 As  $225m : 177m :: 43m : x = 33m$  which with the equivalent of  $4$  Jya  
 =  $184 = 217m$  or  $3d\ 37m$  and as Gola 1 signifies additive,  
 To Mars' Madhya       $11s\ 10d\ 53m$   
 Add Bhuja-phala       $0\ 3\ 37$  =  $11s\ 14d\ 30m$ , 3rd equation

From Sun       $8s\ 28d\ 58m$   
 Take 3rd equation       $11\ 14\ 30$   
 $\underline{\underline{3\ )\ 9\ 14\ 28}}$

Gola 3 and  $0s\ 14d\ 28m$  deduct from 3 signs =  $2s\ 15d\ 32m$  or  
 4532 minutes Bhuja.

As  $225m : 4532m :: 1$  Jya :  $x = 20$  Jyas and  $32m$  remainder,  
 Gola 3, use Makara :  $20$  Jya =  $1687$  }  
 $21$  " =  $1760$  } =  $73m$  vivara  
 As  $225m : 32m :: 73m : x = 10m$  which with the equivalent of  $20$  Jya  
 =  $1687 = 1697m$  or  $28d\ 17m$  and as Gola 3 signifies subtractive,

From 3rd equation       $11s\ 14d\ 30m$   
 Take Bhuja-phala       $0\ 28\ 17$   
 Mars' true position Sunday midnight       $10\ 16\ 13$  = 4th equation

Saturday at midnight mean position {  
 Sun       $8s\ 27d\ 59m$   
 Mars       $11\ 10\ 22$   
 Apsis       $4\ 11\ 3$

From Sun       $8s\ 27d\ 59m$   
 Take Mars       $11\ 10\ 22$   
 $\underline{\underline{3\ )\ 9\ 17\ 37}}$

Gola 3 and  $0s\ 17d\ 37m$  deduct from 3 signs =  $2s\ 12d\ 23m$  or  
 4343 minutes Bhuja.

As  $225m : 4343m :: 1$  Jya :  $x = 19$  Jyas and  $68m$  remainder  
 Gola 3, use Makara :  $19$  Jyas =  $1611$  }  
 $20$  " =  $1687$  } =  $76m$  vivara  
 As  $225m : 68m :: 76m : x = 22m$  which with the equivalent of  $19$  Jya  
 =  $1611 = 1633$  or at  $\frac{1}{2} = 13d\ 36m$  and as Gola 3 signifies subtractive,  
 From Mars' Madhya       $11s\ 10d\ 22m$   
 Take Bhuja-phala       $0\ 13\ 36$  =  $10s\ 26d\ 46m$ , 1st equation.

$$\begin{array}{l} \text{From Apsis} \quad 4s \ 11d \ 3m \\ \text{Take 1st equation} \quad 10 \ 26 \ 46 \\ \hline 3 ) \quad 5 \ 14 \ 17 \end{array}$$

Gola 1 and 2s 14d 17m deduct from 3 signs = 0s 15d 43m or 943 minutes Bhuja.

$$\begin{array}{l} \text{As } 225m : 943 :: 1 \text{ Jya} : x = 4 \text{ Jyas and } 43m \text{ remainder} \\ \text{Manda} : \quad \quad \quad 4 \text{ " } = 184 \\ \quad \quad \quad 5 \text{ " } = 227 \} = 43m \text{ vivara} \end{array}$$

As 225m : 43m :: 43m : x = 8m which with the equivalent of 4 Jya  
= 184 = 192m or at  $\frac{1}{2}$  = 1d 36m and as Gola 1 signifies additive,  
To 1st equation 10s 26d 46m  
Add Bhuja-phala 0s 1d 36m = 10s 28d 22m, 2nd equation.

$$\begin{array}{l} \text{From Apsis} \quad 4s \ 11d \ 3m \\ \text{Take 2nd equation} \quad 10 \ 28 \ 22 \\ \hline 3 ) \quad 5 \ 12 \ 41 \end{array}$$

Gola 1 and 2s 12d 41m deduct from 3 signs = 0s 17d 19m or 1039 minutes Bhuja.

As 225m : 1039m :: 1 Jya : x = 4 Jyas and 139m remainder  
Manda : 4 Jya = 184m } = 43m vivara  
5 " = 227 }  
As 225m : 139m :: 43m : x = 26m which with the equivalent of 4  
Jya = 184 = 210m or 3d 30m and as Gola 1 signifies additive,  
To Mars' Madhya 11s 10d 22m  
Add Bhuja-phala 0 3 30 = 11s 13d 52m, 3rd equation

$$\begin{array}{l} \text{From Sun} \quad 8s \ 27d \ 59m \\ \text{Take 3rd equation} \quad 11 \ 13 \ 52 \\ \hline 3 ) \quad 9 \ 14 \ 7 \end{array}$$

Gola 3 and 0s 14d 7m deduct from 3 signs = 2s 15d 53m or 4553 minutes Bhuja.

As 225m : 4553m :: 1 Jya : x = 20 Jya and 53m remainder  
Gola 3, use Makara : 20 Jyas = 1687m }  
21 " = 1760 } = 73m vivara  
As 225m : 53m :: 73m : x = 17m which with the equivalent of  
20 Jya = 1687 = 1704m or 28d 24m and as Gola 3 signifies subtractive,  
From 3rd equation 11s 13d 52m  
Take Bhuja-phala 0 28 24

$$\text{Mars' true position Saturday midnight} \quad 10 \ 15 \ 28 = 4\text{th equation}$$

$$\begin{array}{lll} \text{Mars' true position at midnight on Sunday} & 10s \ 16d \ 13m \\ \text{ditto} & \text{ditto} & \text{Saturday} \end{array}$$

$$\begin{array}{r} \text{Daily motion} \\ \hline 0 \ 0 \ 45 \end{array}$$

As 24 hrs: 10 hrs: : 45m: x = 28m which added  
to position at midnight on Saturday = 10s 15d 28m

$$\begin{array}{r} \text{at 10 a.m. on Sunday, the 11th January 1874} \\ \hline 10 \ 15 \ 56 \end{array}$$

## MERCURY'S MEAN LONGITUDE.

**RULE.** Multiply the accumulated Savana days by 100 from which product deduct 2225, the remainder divided by 8797, the quotient is the elapsed number of revolutions (to be rejected). Reduce the remainder to Signs, Degrees and Minutes by the multiplication of 12, 30 and 60 successively and dividing each product by 8797. From the result deduct 4 degrees and 2ms. for correction from observation.

To correct the above, add the quotient of the Rassa divided by 809, to Savana days—remainder of this multiplied by 10, the product divided by 33—add the quotient to the minutes ; the result is the mean place of Mercury (16).

	49605 Accumulated Savana days
Multiply by	100
Deduct adjustment	<u>4960500</u> 2225 brought over at beginning of epoch
Divide by 8797 )	<u>4958275</u> ( 563 Revolutions <u>4952711</u>
	5564 12 Signs
	66768 ( 7    Correction :— 61579
	5189    As 809 years = 1 day 30 Degrees    135     "     = 0
	155670 ( 17    and as 33     "     = 10m 149549    135     "     = 41m

(16) The multiplication of 100 and the division by 8797 = 87 days in a revolution and the fraction converted to decimal i.e.,  $87 \frac{9}{10} \frac{7}{100}$  or 87'97. The decimal point could be still extended to more than two places ; so it is a little in excess of the real quantity, as a divisor. To correct this difference it is found that every 809 years of the rassa=one Savana day and the remainder of which  $\frac{1}{8} \frac{0}{8}$  times for one minute of motion, additive.

These adjustments are obtained as below :—

According to Suryasiddhanta :—

$$\text{As } 1577917828 \text{ D} : 49582 \frac{7}{8} \text{ D} : : 17937060 \text{ Time of revn : } x = \\ 49582 \frac{7}{8} \times 17937060 = \frac{889366761715}{1577917828} = 563R 7s 18d 23m$$

According to Samdittha without correction :—

$$\text{As } 87'97 \text{ D} : 49582.75 \text{ D} : : 1 \text{ Rev. : } x = \frac{49582.75}{87.97} = \frac{563}{0} \frac{7}{0} \frac{17}{0} \frac{42}{41}$$

Making a difference of motion of  
in excess for a period of 135 years, for not taking the fraction into account.

$$\therefore \text{as } 135 \text{ years} = 41 \text{m of motion} \\ x \text{ no. of years} = 4d 5\frac{1}{2}m \text{ or } 245\frac{1}{2}m \text{ (which is equivalent of Mercury's daily motion)} \\ = \frac{135 \times 491}{41 \times 2} = \frac{66285}{82} = 809 \text{ years}$$

Since, as 809 years = 245 $\frac{1}{2}$  minutes of motion

$$\therefore x \text{ no. of years} = 10 \text{ ditto} \\ = \frac{809 \times 10 \times 2}{491} = 33 \text{ years}$$

6121	
60	Minutes
<hr/>	
367260 ( 42	
369474	
<hr/>	
As per above calculation	7s 17d 42m
Add correction	0 0 41
	<hr/>
Deduct for correction from observation	= 0 4 2
Mercury's at midnight on Sunday mean place	= 7 14 21
Deduct daily motion	4 6
	<hr/>
Mercury's at midnight on Saturday mean place	7 10 15
	<hr/>

## MERCURY'S TRUE LONGITUDE.

Sunday at midnight mean position	I Mercury 7s 14d 21m II Sun 8 28 58 III Apsis 7 23 28
----------------------------------	---

From mean Mercury	7s 14d 21m
Take mean Sun	8 28 58
	<hr/>
3 )	10 15 23

Gola 3 and 1s 15d 23m deduct from 3 signs = 1s 14d 37m or 2677 minutes Bhuja.

As 225m : 2677m : : 1 Jya : x = 11 Jyas and 202m remainder
Gola 3, use Makara : 11 Jya = 645 {
12 " = 699 } = 54m vivara
As 225m : 202m : : 54m : x = 48m which with the equivalent of
11 Jya = 645 = 693 or at $\frac{1}{2}$ = 5d 46 and as Gola 3, signifies subtractive,
From Sun 8s 28d 58m
Take Bhuja-phala 0 5 46 = 8s 23d 12m, 1st equation

From Apsis	7s 23d 28m
Deduct 1st equation	8 23 12
	<hr/>
3 )	11 0 16

Gola 3 and 2s 0d 16m deduct from 3 signs = 0s 29d 44m or = 1784 minutes Bhuja

As 225m : 1784m : : 1 Jya : x = 7 Jyas and 209m remainder
Manda : 7 Jya = 123 {
8 " = 138 } = 15m vivara
As 225m : 209m : : 15m : x = 14m which with the equivalent of
7 Jya = 123 = 137m or at $\frac{1}{2}$ = 1d 8m and as Gola 3 signifies subtractive,
From 1st equation 8s 23d 12m
Take Bhuja-phala 0 1 8 = 8s 22d 4m, 2nd equation

$$\begin{array}{r}
 \text{From Apsis} & 7s 23d 28m \\
 \text{Deduct 2nd equation} & 8 \quad 22 \quad 4 \\
 \hline
 3) & 11 \quad 1 \quad 24
 \end{array}$$

Gola 3 and 2s 1d 24m deduct from 3 signs = 0s 28d 36m or  
1716 minutes Bhuja,

As 225m : 1716m :: 1 Jya : x = 7 Jyas and 141m remainder  
Manda : 7 Jya = 123m } = 15m vivara  
8 " = 138 }

As 225m : 141m :: 15m : x = 9m which with the equivalent of  
7 Jya = 123 = 132 or 2d 12m and as Gola 3 signifies subtractive,

$$\begin{array}{r}
 \text{From Sun} & 8s 28d 58m \\
 \text{Deduct Bhuja-phala} & 0 \quad 2 \quad 12 = 8s 26d 46m, 3rd equation \\
 \hline
 \text{From Mercury} & 7s 14d 21m \\
 \text{Take 3rd equation} & 8 \quad 26 \quad 46 \\
 \hline
 3) & 10 \quad 17 \quad 35
 \end{array}$$

Gola 3 and 1s 17d 35m deduct from 3 signs = 1s 12d 25m or  
2545 minutes Bhuja,

As 225m : 2545m :: 1 Jya : x = 11 Jyas and 70m remainder  
Gola 3 use Makara : 11 Jya = 645m } = 54m vivara  
12 " = 699 }

As 225m : 70m :: 54m : x = 17m which with the equivalent of 11 Jya =  
645 = 662m or 11d 2m and as Gola 3 signifies subtractive,

$$\begin{array}{r}
 \text{From 3rd equation} & 8s 26d 46m \\
 \text{Deduct Bhuja-phala} & 0 \quad 11 \quad 2 \\
 \hline
 \end{array}$$

Mercury's true place on Sunday midnight 8 15 44 = 4th equation

Saturday at midnight mean position	I	Mercury	7s 10d 15m
	II	Sun	8 27 59
	III	Apsis	7 23 28

$$\begin{array}{r}
 \text{From Mercury mean} & 7s 10d 15m \\
 \text{Take Sun} & 8 \quad 27 \quad 59 \\
 \hline
 3) & 10 \quad 12 \quad 16
 \end{array}$$

Gola 3 and 1s 12d 16m deduct from 3 signs = 1s 17d 44m or  
2864 minutes Bhuja,

As 225m : 2864m :: 1 Jya : x = 12 Jyas and 164m remainder  
Gola 3 use Makara : 12 Jya = 699 } = 53m vivara  
13 " = 752 }

As 225m : 164m :: 53m : x = 39m which with the equivalent of 12 Jya =  
699 = 738m or at  $\frac{1}{2}$  = 6d 9m and as Gola 3 signifies subtractive,

$$\begin{array}{r}
 \text{From Sun} & 8s 27d 59m \\
 \text{Take Bhuja-phala} & 0 \quad 6 \quad 9 = 8s 21d 50m, 1st equation \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 \text{From Apsis} & 7s 23d 28m \\
 \text{Take 1st equation} & 8 \quad 21 \quad 50 \\
 \hline
 3) & 11 \quad 1 \quad 38
 \end{array}$$

Gola 3 and 2s 1d 38m deduct from 3 signs = 0s 28d 22m =  
1702 minutes Bhuja,

As 225m : 1702m : : 1 Jya : x = 7 Jyas and 127m remainder

$$\begin{array}{l} \text{Manda : 7 Jya} = 123 \\ 8 \quad " = 138 \end{array} \} = 15\text{m vivara}$$

As 225m : 127m : : 15m : x = 8m which with the equivalent of  
7 Jya = 123 = 131m or at  $\frac{1}{2} = 1\text{d } 5\text{m}$  and as Gola 3 signifies subtractive,

$$\text{From 1st equation} \quad 8s \ 21d \ 50m$$

$$\text{Deduct Bhuja-phala} \quad 0 \quad 1 \quad 5 = 8s \ 20d \ 45m, \text{ 2nd equation}$$

$$\begin{array}{rcl} \text{From Apsis} & 7s \ 23d \ 28m \\ \text{Take 2nd equation} & 8 \ 20 \ 45 \\ \hline \end{array}$$

$$3 \ ) \ 11 \ 2 \ 43$$

Gola 3 and 2s 2d 43m deduct from 3 signs = 0s 27d 17m =  
1637 minutes Bhaja,

As 225m : 1637m : : 1 Jya : x = 7 Jyas and 62m remainder

$$\begin{array}{l} \text{Manda : 7 Jya} = 123 \\ 8 \quad " = 138 \end{array} \} = 15\text{m vivara}$$

As 225m : 62m : : 15m : x = 4m which with the equivalent of  
7 Jya = 123 = 127m or 2d 7m and as Gola 3 signifies subtractive,

$$\text{From Sun} \quad 8s \ 27d \ 59m$$

$$\text{Take Bhuja-phala} \quad 0 \quad 2 \quad 7 = 8s \ 25d \ 52m, \text{ 3rd equation}$$

$$\begin{array}{rcl} \text{From Mercury} & 7 \ 10 \ 15 \\ \text{Take 3rd equation} & 8 \ 25 \ 52 \\ \hline \end{array}$$

$$3 \ ) \ 10 \ 14 \ 23$$

Gola 3 and 1s 14d 23m deduct from 3 signs = 1s 15d 37m or  
2737 minutes Bhaja,

As 225m : 2737m : : 1 Jya : x = 12 Jyas and 37m remainder

$$\begin{array}{l} \text{Gola 3 use Makara 12 Jyas} = 699 \\ 13 \quad " = 752 \end{array} \} = 53\text{m vivara}$$

As 225m : 37m : : 53m : x = 9m which with the equivalent of  
12 Jya = 699 = 708 or 11d 48m and as Gola 3 signifies subtractive,

$$\text{From 3rd equation} \quad 8s \ 25d \ 52m$$

$$\text{Take Bhuja-phala} \quad 0 \quad 11 \quad 48$$

Mercury's true position at midnight on Saturday 8 14 4, 4th equation

Mercury's true position at midnight on Sunday 8s 15d 44m  
ditto ditto Saturday 8 14 4

Daily motion 0 1 40

As 24 hrs : 10 hrs: 100m : x =  
to position at midnight on Saturday 8 14 4 41 which added

at 10 a.m. on Sunday, the 11th January 1874 8 14 45

## JUPITER'S MEAN LONGITUDE.

RULE.—Multiply the accumulated Savana days by 3, from which product deduct 366; the remainder divided by 12997, the quotient is the number of revolutions (to be rejected).—Reduce the remainder to signs, degrees and minutes by the multiplication of 12, 30 and 60 successively and dividing each product by 12997.—From the result deduct 3 degrees for observed correction.

For correction, add one Savana day for every 933 years of the Rassa, remainder of which, for every 186 years one minute of motion.

The result is the mean position of Jupiter. (17)

To	49605	accumulated Savana days
Multiply by	3	
	148815	
Deduct adjustment	366	brought over at beginning of epoch
	148449	( 11 Revolutions
Divide by 12997 )	142967	
	5482	
	12 Signs	Correction :
	65784 ( 5	As 933 years = 1 day
	64985	135 " = 0
	799	And as 186 " = 1 minute
	30 Degrees	135 " = 43 seconds
	23970 ( 1	
	12997	

(17) The multiplication of 3 and the division by 12997 is = 4332½ days in a revolution of Jupiter, which is a little in excess of its quantity, as the correct amount reduced to eleven decimal places is 4332.32065231481 whereas the other value reduced is 4332.3. The difference is accounted for by taking one day in every 933 years and one minute of motion for every 186 years, which adjustments are arrived at as follows :—

According to Suryasiddhanta :—

As 1577917828 D : ( 49605 - 366 ) D : : 364220 Times of rev : x =

$$\frac{49483 \times 364220}{1577917828} = \frac{18022698260}{1577917828} = 11\text{Rev. } 5\text{S } 1\text{d } 51\text{m } 37\frac{1}{2}$$

According to Samudittha without correction :—

As per calculation in Texts

Making a difference of motion

11R	5	1	50	65½
0	0	0	0	.72½

in excess for the unaccounted fraction :..

∴ As 135 years = '72½' or 43½"

x no. of years = 5m or 300", (equivalent of Jupiter's daily motion)

$$= \frac{135 \times 300 \times 5}{217} = \frac{202500}{217} = 933 \text{ years}$$

Since, as 933 years = 5m of motion | =  $\frac{933}{5}$  = 186 years.

x no. of years = 1m do | =  $\frac{1}{5}$

	10973
	60 minutes
	<u>658380 ( 51</u>
	64985
	<u>8530</u>
As per above calculation	5s 1d 51m
Add correction	<u>0 0 0 (43) =</u>
Deduct for correction from observation	<u>0 3 0</u>
Jupiter's at midnight on Sunday mean place	4 28 51
Deduct daily motion	<u>0 0 4</u>
Jupiter's at midnight on Saturday mean place	<u>4 28 47</u>

## JUPITER'S TRUE LONGITUDE.

Sunday at midnight mean position	I Sun      8s 28d 58m
	II Jupiter 4 28 51
	III Apsis 5 20 22

From Sun	8s 28d 58m
Deduct Jupiter	<u>.4 28 51</u>
	<u>3 ) 4 0 7</u>

Gola 1 and 1s 0d 7m deduct from 3 signs = 1s 29d 53m or 3593 minutes Bhuja.

As 225m : 3593m :: 1 Jya : x = 15 Jyas and 218m remainder.

Gola 1 use Karki : 15 Jya = 633 } = 17m vivara  
16 " = 650 }

As 225m : 218m :: 17m : x = 16m which with the equivalent of 15  
Jya = 633 = 649m or at  $\frac{1}{2}$  = 5d 24m and as Gola 1 signifies additive,  
To Madhya                  4s 28d 51m  
Add Bhuja-phala            5 24 = 5s 4d 15m, 1st equation.

From Apsis	5s 20d 22m
Take 1st equation	<u>5 4 15</u>
	<u>3 ) 0 16 7</u>

Gola 0 and 0s 16d 7m (no deduction) = 967m Bhaja

As 225m : 967m :: 1 Jya : x = 4 Jyas and 67m remainder

Manda : 4 Jya = 81 }  
5 " = 100 } = 19m vivara

As 225m : 67m :: 19m : x = 6m which with the equivalent of 4  
Jya = 81 = 87m or at  $\frac{1}{2}$  = 44m and as Gola 0 signifies additive,  
To 1st equation            5s 4d 15m  
Add Bhuja-phala           0 0 44 = 5s 4d 59m, 2nd equation.

From Apsis	5s 20d 22m
Take 2nd equation	<u>5 4 59</u>
	<u>3 ) 0 15 23</u>

Gola 0 and 0s 15d 23m (no deduction) = 923m Bhaja

As 225m : 923m :: 1 Jya : x = 4 Jyas and 23m remainder  
 Manda : 4 Jya = 81 }  
 5 " = 100 } = 19m vivara  
 As 225m : 23m :: 19m : x = 2m which with the equivalent of 4  
 Jya = 81 = 83m or 1d 23m and as Gola 0 signifies additive,  
 To Jupiter Madhya 4s 28d 51m  
 Add Bhuja-phala 0 1 23 = 5s 0d 14m, 3rd equation  
 From Sun 8s 28d 58m  
 Take 3rd equation 5 0 14  

$$\begin{array}{r} 3 ) \\ \hline 3 & 28 & 44 \end{array}$$

Gola 1 and 0s 28d 44m deduct from 3 signs = 2s 1d 16m or 3676  
 minutes Bhuja.

As 225m : 3676m :: 1 Jya : x = 16 Jyas and 76m remainder  
 Gola 1 use Karki : 16 Jya = 650 }  
 17 " = 665 } = 15m vivara  
 As 225m : 76m :: 15m : x = 5m which with the equivalent of 16  
 Jya = 650 = 655m or 10d 55m and as Gola 1 signifies additive,  
 To the 3rd equation 5s 0d 14m  
 Add Bhuja-phala 0 10 55  
 Jupiter's true position at midnight on Sunday 5 11 9, 4th equation.

Saturday at midnight mean position	I Sun 8s 27d 59m
	II Jupiter 4 28 47
	III Apsis 5 20 22

From Sun 8s 27d 59m  
 Take Jupiter 4 28 47  

$$\begin{array}{r} 3 ) \\ \hline 3 & 29 & 12 \end{array}$$

Gola 1 and 0s 29d 12m deduct from 3 signs = 2s 0d 48m or  
 3648 minutes Bhuja-phala

As 225m : 3648m :: 1 Jya : x = 16 Jyas and 48m remainder  
 Gola 1 use Karki : 16 Jyas = 650 }  
 17 " = 665 } = 15m vivara  
 As 225m : 48m :: 15m : x = 3m which with the equivalent of 16  
 Jya = 650 = 653m or at  $\frac{1}{2}$  = 5d 25m and as Gola 1 signifies additive,  
 To Jupiter Madhya 4s 28d 47m  
 Add Bhuja-phala 0 5 25 = 5s 4d 12m, 1st equation.

From Apsis 5s 20d 22m  
 Take 1st equation 5 4 12  

$$\begin{array}{r} 3 ) \\ \hline 0 & 16 & 10 \end{array}$$

Gola 0 and 0s 16d 10m (no deduction) = 970m Bhuja

As 225m : 970m :: 1 Jya : x = 4 Jyas and 70m remainder  
 Manda : 4 Jya = 81 }  
 5 " = 100 } = 19m vivara  
 As 225m : 70m :: 19m : x = 6m which with the equivalent of 4 Jya = 81 =  
 87m or at  $\frac{1}{2}$  = 0d 43m, and as Gola 0 signifies additive,

To 1st equation      5s 4d 12m  
 Add Bhuja-phala      0 0 43 = 5s 4d 55m, 2nd equation.

From Apsis      5s 20d 22m  
 Take 2nd equation      5 4 55  
 \_\_\_\_\_  
 3 ) 0 15 27

Gola 0 and 0s 15d 27m (no deduction) = 927m Bhuja

As 225m : 927m :: 1 Jya : x = 4 Jyas and 27m remainder.

Manda : 4 Jya = 81 }  
 5 " = 100 } = 19m vivara

As 225m : 27m :: 19m : x = 2m which with the equivalent of 4  
 Jya = 81 = 83m or 1d 23m and as Gola 0 signifies additive,

To Jupiter Madhya      4s 28d 47m  
 Add Bhuja-phala      0 1 23 = 5s 0d 10m, 3rd equation.

From Sun      8s 27d 59m  
 Take 3rd equation      5 0 10  
 \_\_\_\_\_  
 3 ) 3 27 49

Gola 1 and 0s 27d 49m deduct from 3 signs = 2s 2d 11m or  
 3731 minutes Bhuja.

As 225m : 3731m :: 1 Jya : x = 16 Jyas and 131m remainder

Gola 1 use Karki : 16 Jya = 650 }  
 17 " = 665 } = 15m vivara

As 225m : 131m :: 15m : x = 8m which with the equivalent of  
 16 Jya = 650 = 658m or 10d 58m and as Gola 1 signifies additive,

To the 3rd equation      5s 0d 10m  
 Add Bhuja-phala      0 10 58

Jupiter's true position at midnight on Saturday      5 11 8, 4th equation.

Jupiter's true position at midnight on Sunday      5s 11d 9m  
 do.      do.      Saturday      5 11 8  
 \_\_\_\_\_

Daily motion      0 0 1  
 \_\_\_\_\_

As 24 hrs : 10 hrs :: 1m : x : =      25sec which  
 added to position at midnight on Saturday      5s 11d 8m 0  
 \_\_\_\_\_

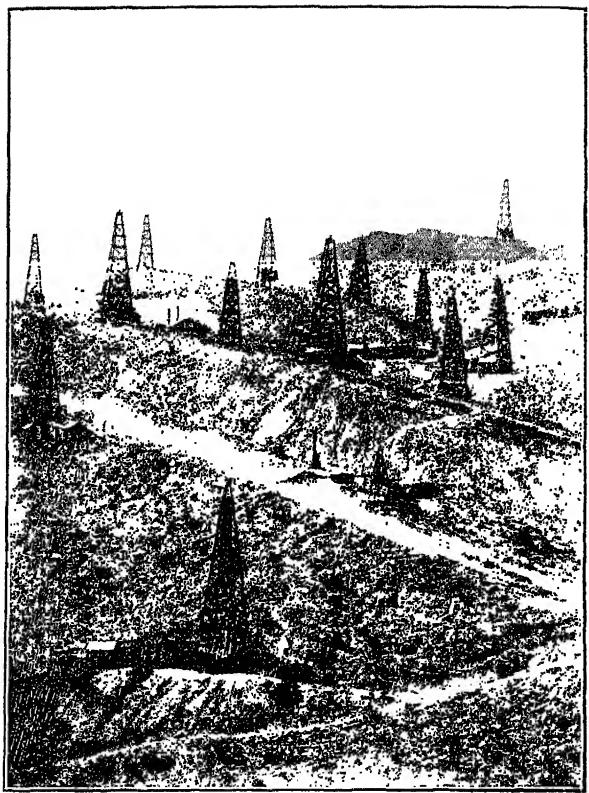
at 10 a.m. on Sunday the 11th January 1874      5 11 8 25

( to be continued )

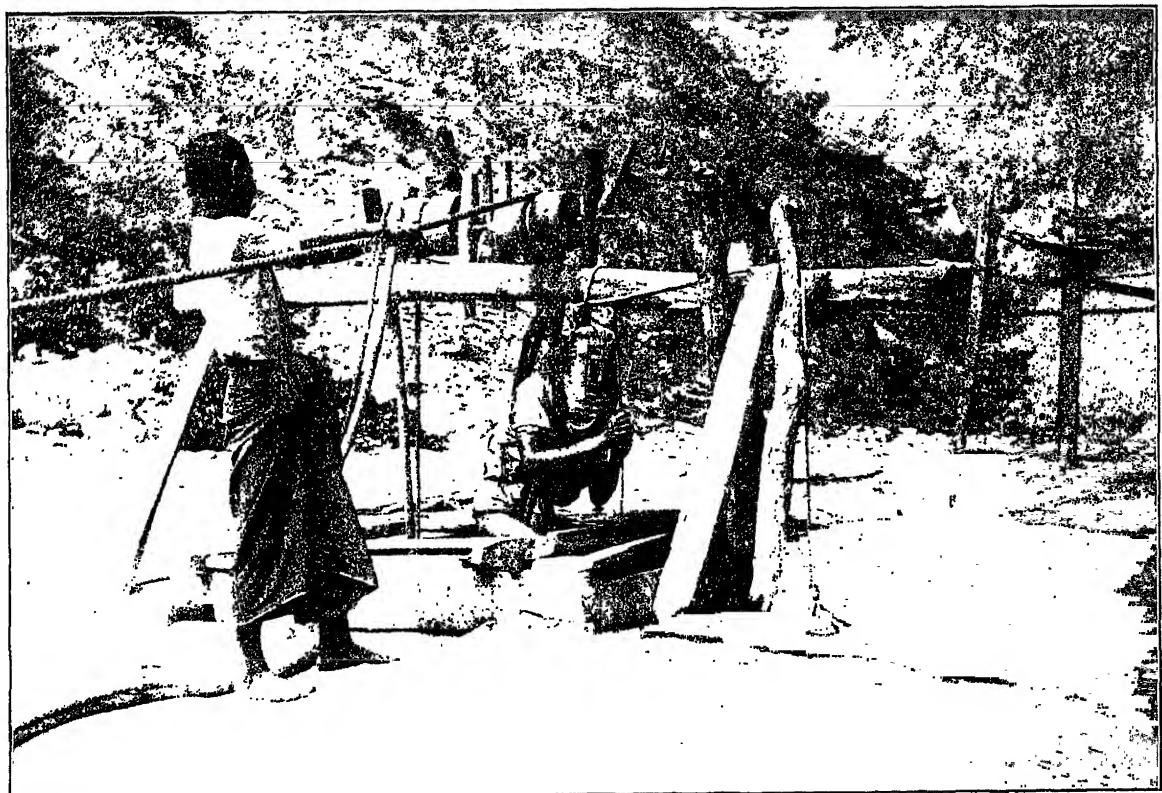




Burmese petroleum well.



A view of some of the machinery wells, Yenangyat.



Lowering a miner in diving apparatus.

## THE PETROLEUM WELLS OF YENANGYAT

BY

L. AUBERT, B.A., B.Sc.  
Superintendent of Land Records

In certain localities in Upper Burma, a kind of petroleum or naphtha of a dingy green colour, somewhat of the consistency of treacle, and odorous is extracted from wells dug into the ground. This petroleum is used in its crude state by the natives for burning, and also sometimes as a cure for certain skin diseases. The most important centres of extraction are Yenangyaung, Singu and Yenangyat along the river Irrawaddy.

All that is known of the first discovery of this petroleum is of the usual Burmese mythical character, but, what is certain is that the earth-oil wells of Yenangyaung were for a long time a lucrative source of revenue to the Burmese Kings. In the time of King Mindon (1852-1878), as much as six lakhs of rupees (£40,000) were paid yearly as royalty into the Treasury.

The sinking of a well by the Burmese is done at the present day exactly in the same manner as that described by Capt: Cox, of the East India Company, who visited the oil-wells in 1797.(1) The tool used for digging is called "*taywin*" which consists of a chisel-shaped iron shoe fixed to a club-shaped wooden handle. The miner grasps his *taywin* about the middle, rests the upper notched end of the handle against his shoulder, and drives the point with the whole weight of his body. The hard strata are broken through by dropping a pointed lump of iron, weighing about 60 viss, (220lbs) from the mouth of the shaft. The shaft is sunk in a square form and lined, as the miner proceeds, with staves of *acacia* wood (Burm: *sha*) about 6 feet long and about 6 inches or a foot broad, rudely jointed and pinned at right angles to each other to form a square frame. When the miner has dug from 4 to 6 feet of the shaft, a series of these square frames piled on each other are lowered in and regularly added to at the top, the whole gradually sinking as he deepens the shaft, and protecting him against the falling in of the sides. The miners are lowered by a rope which ends in two slings through which they pass their legs. No light can be taken down the shaft on account of the explosive gases, and the fumes moreover render breathing impossible. Miners sometimes wear a sort of diver's apparatus consisting of an air-tight jacket to which is adapted a tin helmet with a pane of glass in front to enable them to see. When lowered, air is pumped in through a pipe attached to the helmet. With this apparatus, miners can now remain below two hours and sometimes more; but, it took the people formerly years to dig a pit well only 150 feet deep.

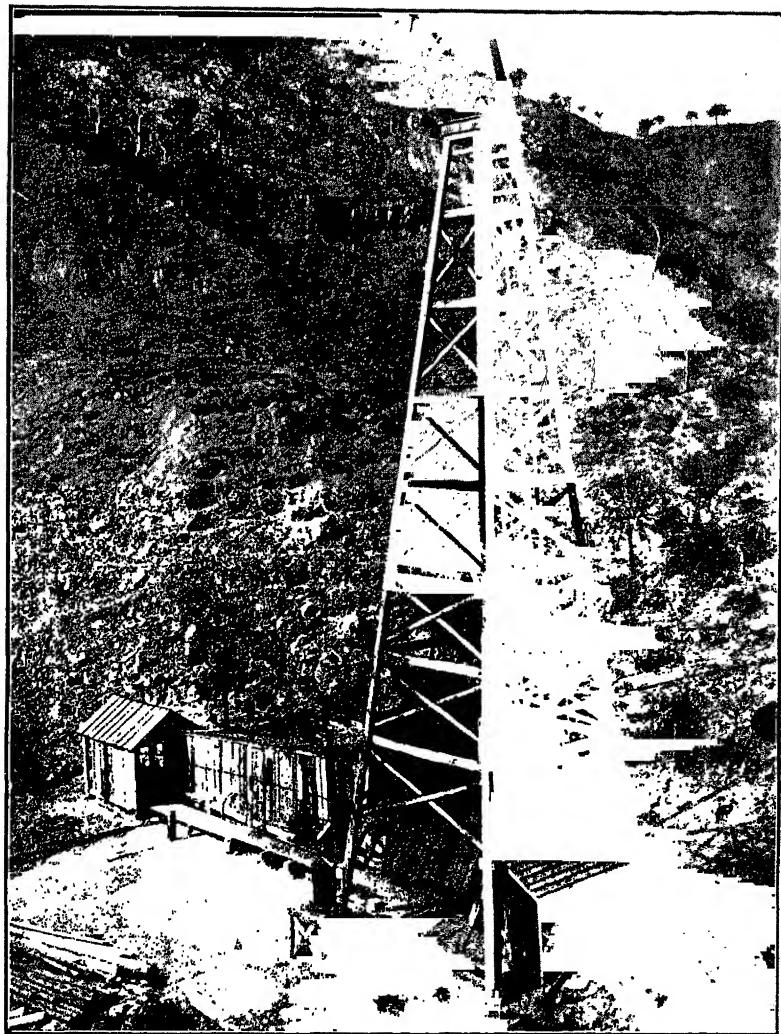
The machinery used in lowering the miner, as also in drawing up the loosened earth and fragments of rock and, afterwards, the oil, is an axle crossing the centre of the well. This axle is supported by two rude forked stanchions, with a revolving barrel on its centre, like the nave of a wheel, in which is a score for the draw-rope. A pit well of this kind, when in full working order, supplies on an average 50 viss, nearly 23 gallons, of crude petroleum a day.(2)

Messrs: Finlay, Fleming & Co., also styled the Burma Oil Company, who started boring in 1887, have now secured the majority of the leases. The system adopted is the American or cable system, and their out-put at Yenangyat averages  $4\frac{3}{4}$  million gallons of crude oil annually.

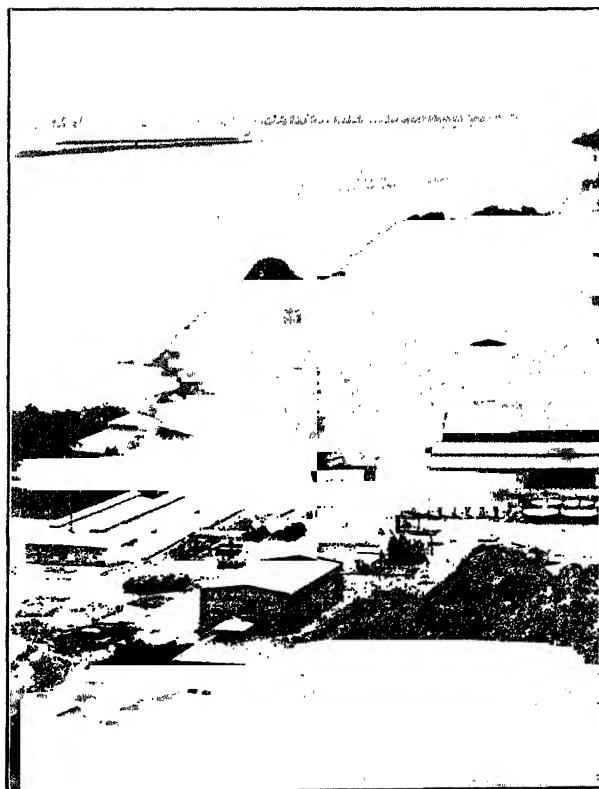
1. His detailed report will be found in Volume VI of the Asiatic Researches, 1799.

2. A gallon of crude petroleum weighs 2.22 viss or 8.10 lbs.





A modern machinery well.



Views of the petroleum refinery, Yenangyat.



## BURMESE PROVERBS

The fact that the Burmese are fond of moralizing gives a tinge of morality to their proverbs. To draw a moral from anything they have heard is quite natural to them. They find a rich mine of legend and myth, folk-lore and superstition, religion and ethics in the Jātakas or Buddhist Birth Stories. It is all one to them whether these stories were given to them from India or whether they were the products of their own minds. They never seem so much as to trouble themselves about such a trivial thing as that. They are satisfied that the stories are about the Buddha and are, on that account, worthy of their closest study and deepest reverence. They thus come to look upon them as their own by right of their religion. And thus it is that the whole nation is soaked and leavened through and through with these superb tales. The morals they yield serve as sermons and lectures by the clergy; they are quoted when the father gives the son a schooling and when the mother coaxes the daughter; they give relief to the afflicted and consolation to the dying; and they form a medium for the courtship of lovers. The greatest names in Burmese poetry vied with one another in basing their master-pieces on them. In short, they discover the genius, wit and spirit of the nation. And they are nothing if they are not proverbs.

It must not, however, be supposed that the Jātakas are the only source of Burmese proverbs. There are other sources such as the commentary on the Dhammapada, historical accounts and various other incidents in superstition and legend. Still such proverbs as are of this nature do not exhaust the fine collection of Burmese proverbs. Just as in literature we may note the genius of the people branching in two different lines, one where it reflects acquired knowledge in its own light—like the *pyo*, where we generally have a Jātaka in Burmese poetical garb—and the other where it is creative—like the various songs which are original productions—so besides these proverbs, which are tales distilled into morals, there are others, which are the outcome of the nation's wit, poetry and genius. These are of various kinds; some reveal a true insight into human nature and others recall certain superstitious ideas; some savour of religion and others are humorously sarcastic.

A characteristic feature of Burmese proverbs is that most of them, especially those that have a morality of their own, have stories to illustrate their meaning. These stories possess great merits, being as entertaining in themselves as illustrative of the proverbs to which they give birth. Even those proverbs of which the meaning is obvious and which do not require tales to illustrate them have definite explanatory notes. A selection is given below. They have been adapted or freely translated from the various collections made of them in Burmese.

1. ဝေးအူးမျှနှုန်းပြီး

Talk too many words, and you become a slave.

Once an old cultivator carrying some vegetables rolled up in his loin cloth stopped at a toddy-shop and was drinking some toddy. A number of young men of evil repute, on seeing him entered the shop with the intention of swindling him. When they had made themselves drunk they hit upon a curious plan and made a vow that each of them was desired to relate something which he saw with his own eyes and whoever denied the truth of his statement or disbelieved what he related must become their slave for life. They also got the old man to join them and bound him with a sacred oath. One of them began: "Sirs, when I was still in my mother's womb, my mother had an intense desire for a *thi* fruit. There being nobody to get the fruit for her, I myself went to the tree and being unable to climb it took hold of my two legs and threw them up the tree just as I might throw a stick. When I got there I went from branch to branch plucking many fruits and not being able to come down went home and

brought a ladder by which I descended and went home and gave the fruits to my mother. The fruits were of the size of a big earthen jar and my mother ate sixty of them at one sitting. They were also distributed among young and old alike and still so many were left that they filled the house up to the roof besides forming a pile at the gate. This pile measured 160 cubits in height. Whoever does not believe it, let him say so." The old man said nothing.

A second began :—"Sirs, own house is so very high that when my mother gave birth to a child, he happened to fall slipping through an opening in the floor and he fell and fell until he became 120 years of age, a decrepit old man with grey hair and broken tooth. And he found himself in the middle storey only. Whoever disbelieves it, let him speak out." The old man kept silent.

A third began :—"The ring I used to wear when I was young was bought from the Akaniṭṭha Brahma. By virtue of its powers I could fly in the sky and dive through the earth ; I could get a celestial nymph in a moment if I wanted one and become without a moment's delay a Universal monarch, should I be so inclined. The man who wears it becomes a *nat* ; were he to look upwards he could see the various heavenly mansions ; downwards all the places of suffering. To make it secure from theft I kept it in Nirvāṇa. Whoever is in doubt about it, let him say so." The old man again kept his silence.

A fourth began :—"Sirs, when I was a child, I had a very sharp knife. Once I cut with it the whole forest of the Himalayas in a second and when I threw it into the ocean it cut into pieces all the living creatures in the water and brought them to my house. I distributed them to all the inhabitants of the Four Continents and still had a huge remainder. I gave the knife to the King of Avici Hell who asked for it and I have been missing it up to the present. Does any body doubt it?" The old man replied :—"Well sirs, considering the extent of your country, I suppose we should believe all you have said. But pray listen to me : Once upon a time I was a cultivator. In my plantation there was a big cotton tree, 120 cubits in height. It was beautiful with leaves and branches. It had five main branches. Four of them did not bear fruit but the fifth pointing eastward bore a fruit of the size of a big earthen jar. The fruit had six compartments lengthwise, which developed into six opened bolls. One day I shaved and bathed and dressed and went to look at the plantation. I saw the bolls and stretched out my hand to pluck them. As soon as I touched them, they changed into four slaves of fine physique and willing submissiveness. After a time they deserted me. All my enquiries were in vain. But I see them now in front of me. You four are my slaves. You are named Nanda, you Sumana, you Vatṭamāna and you Maṅgala." So saying he caught them by their top-knot. They wanted to deny that they were his slaves. But they thought of their oath. And they dared not disbelieve what he said, because of their oath. So they kept silent. Thereupon the old man took them to the court where it was decided that they should become his slaves for life.

### 2. အောင်းရှိုးအုံးရှိုး

Every time a young *thamin* is born, the tiger eats it up.

Once a cultivator reared a female *thamin* in a forest. One day she gave birth to a young one. A tiger ate it up. The cultivator came and looked and knew its sad fate and went home. A second time the *thamin* gave birth to a young one. The tiger ate up that too. The cultivator came and looked and knew its sad fate and went away, muttering to himself, "Every time a young *thamin* is born the tiger eats it up."

### 3. အကျိုးတော်းမွန်းပေါင်းဖျက်

The *dain daung* must destroy the enthusiasm of writing.

Once there lived in Pagan an eccentric man. He was called Truthful because whatever he said became true. It was his habit to walk along the street muttering to himself "Under this tree is buried silver, under that buried gold ; near such and such a hillock is silver, near such a shrine are gold, silver, emerald and other precious stones." People would follow him with the intention of writing

down on paper the names of the places he referred to. And whenever Truthful caught them writing he would run away shouting *dain daung, dain daung*.

4. မြန်တေသနမှာ၊ ဝန်လင်ကင်။

To roast a leg of pork from the opposite bank of the river.

Once upon a time a boat-owner was stopping at a ferry and said to his boat-man, "Look here, man, this is winter being the month of Pyatho. If you can stay in the water the whole night without any clothes on, I will give you all that is mine in this boat whether with life or without life" "Alright sir; and if I fail to do so, I will be your slave for life." The agreement was duly made. Accordingly the boat-man took off all his clothes and jumped into the water and stayed there all night. And in the morning he demanded his prize. The boat-owner unwilling to abide by the agreement said that it would be unfair seeing that the boat-man sustained himself with the warmth from a fire burning on the further bank of the river. A quarrel ensued and they went to Court. The Judge said to the boat-owner "Get a leg of pork and roast it here by means of the fire which is burning on the further bank and when the day has passed let me know the result." So the boat-owner bought a leg of pork and roasted it the whole day and when the day declined the Judge said, "Well, have you succeeded in roasting the leg of pork?" He answered "No. my Lord, the fire is too far away to send its warmth here." The Judge gave his judgment, "In the same way the fire did not send its warmth to the boat-man. You have lost your case and all your belongings in the boat are his."

MAUNG TIN.

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## NOTES AND REVIEWS

### PHILOLOGICAL NOTES

#### I. A note on Talaing Nissayas and Vocabulary

The study of Talaing or the Mon language on a sound scientific and practical basis is, without doubt still in its infancy. By a practical study, Mr. Duroiselle means not only a very good knowledge of the colloquial, but also the ability to read the literary language fluently, and he considers this latter accomplishment to be the more important. The fallacy of this is very evident, for in the vocabulary given by him, he has shown over and over again that he is weak in his knowledge of the colloquial, and that it has been through this that he has failed to detect so many errors. Take the very first word in his vocabulary and here under အခေနတမ္လာ (acen tomla), which has been wrongly pronounced (acen tamla) the word ချွေး etc is given as an example ; a deeper knowledge of the subject would have shown that ချွေး (la we-erng) was a mistake in copying and should have been ချွေး (la me-erng).

Take again the second word in the vocabulary အလျှို့အသီ the latter half အသီ has been wrongly read as 'asim' instead of 'asoi,' this error being due to the Burmese vowel sign being used by the copyist through carelessness, instead of the same Talaing vowel sign.

It would be needless to take any more examples as the vocabulary abounds in errors, but it only shows that a thorough knowledge of the colloquial is just as important as being able to read fluently, and correctly.

Mr. Duroiselle then goes on to say 'what makes these works so difficult to read, is the large amount of new words one meets with.' Is it to be wondered at that no one understands these words when they have been wrongly copied. We are also told that of these words not a few are unknown to the majority of lay Talaings. What experience has Mr. Duroiselle had for making such a statement ? What facilities or opportunities have these Mon priests been given for anyone to ascertain the extent of their knowledge? For the Burmans we have the Patamabyan and other examinations but there are no similar tests for the Mon or Talaing priests. There are many Mon priests who cannot speak a word of Burmese and there are others who have a slight knowledge of Burmese but dare not enter any of these Government Examinations. To such a Mon Patamabyan (or as some would prefer to call it a Talaing Patamabyan) would appeal if we are to enlist their sympathies and get them to help us with manuscripts or in explaining many of the difficulties of their mother tongue. As regards examiners and candidates for such an examination there would not be much difficulty because when U Nah Auk, the builder of most of those splendid kyoungs, at Kawhnat (near Moulmein) was alive, he used to encourage the Mon priests to hold examinations in the Pali Scriptures and offer them suitable rewards. If somewhat similar examinations are held again there will not be much difficulty in selecting the best men to assist us.

The examination held for Government Officers in Talaing should be altered into a Lower standard and Higher Standard if Government officers are to take more interest in the language. At present the standard required is such that there are not many who would care to go through all the drudgery of studying this language.

But I have wandered from the main issue. As I have already shown above many of the so called new words are nothing more than wrongly copied words

and as Mr. Duroiselle admits that the text used by him for compiling his vocabulary is corrupt it is clear that the time has not yet arrived for the issue of a dictionary out of such corrupt manuscripts. What is most important is that the manuscripts in the Bernard Free Library should be compared with other copies of the same and any differences recorded. Words wrongly copied should be corrected and the various shades of meaning noted. Learned Mon priests should be consulted and then these Talaing manuscripts should be printed. From these there will then be no difficulty in fixing the meanings of words. To issue a dictionary out the imperfect material at hand will only be a case of going further and faring worse for the dictionary will not be of much use to any one. If a dictionary is so urgently needed Haswell's dictionary if it were revised and corrected would answer the requirements of many who were interested in the study of Talaing. What we want now are correct printed manuscripts or texts as a basis to work on and then the dictionary can follow in due course.

**အခေနတမာ**—This should be pronounced acen tomla. The expression အေး  
အခေနတမာ is wrong and should be corrected to လျှင်အခေနတမာ

**အလိုအသီ**—This too has been wrongly pronounced, it should be aloy a soi. The word အသီ is a mistake in writing and should be အသီ. One frequently comes across the Burmese superscript ၁, i, being used for the Talaing equivalent ၁, by persons acquainted with Burmese. To a Talaing scholar these little discrepancies present no difficulty because he knows what the word should be, သီ has nothing to do with သိ၏

The words အလိုအသီ are also very often used in the sense of Government, B. အစိုးရ

**အလိုကျေ**—correctly written this should be အလောင်ကျေ. Here အလောင် = B. ကိုပါတိုင် and ကျေ = B. ၃၃

**အလုံကြို**—throughout. The expression အလုံကြို၍ = 'throughout the five Lents' = B. ငါးဝါစိုး. During five lents would be လုံ၍. The B. ပတ်လုံး is therefore wrong.

**အဘွဲ့**—(otta bheer), is often used in the sense of a past existence. It is sometimes used as a blessing—Bhawe bhawe, ဗျာပိဇ္ဇာဝဒ္ဓအဘွဲ့ or 'may you through every existence.'

**အယဝံမာတိ**—Is not made up of two words အယဝံ and မာတိ. In Mon grammars it is shown as one word and is the same as ယဝရ = B. အကပါ၍= however, while စောင် at the end of အယဝံမာတိဂံကိုဟောင် has the force of, if, B. လျှင် that is, if however he sat down = B. အကပါ၍ထိုင်လျှင်

The word အယဝံ has nothing to do with ယဝံ or ဖံ = time. The passage "in the exact measure of my intellect.....shall I" etc., may be altered to 'if however my intellect.....I shall' etc.

**အနှေး**—(ah neer) is the proper pronunciation. The expression ပုံးနှေး is probably a mistake for မူးနှေး

**အာလို**—This is a mistake for အာပလို or လိုအာ

**ကတိဂံကေတိ**—(Kat gán kit) and not (kat góñ ket). Here ကတိ = to learn, study and ဂံကေတိ = to take. It is equivalent to the B. သင်ဖူသည်

**ထွဲ၍**—to rise up or get up and descend. The Pali and Talaing do not agree. I have not seen the word being used in the sense of to be born nor has any example been given to ascertain what word was intended.

ကတ္တိဒ်—Should be pronounced Katóv deer doh.

ကူပါသံ—is pronounced ka nop siom.

ကသံ—(Ka sop) is to consider. It also implies that the thought has not as yet been expressed in words. P. မင်္ဂလာတိ. The word ချုပ် is to consult, talk over, discuss. P. မင်္ဂလာတိ This shows that in the original translation the translator was not careful to give the correct Talaing equivalent, cf. the expressions ကသံအဲချုပ်ကိုတယ ; also မင်္ဂလာတိမျှပိတ် and မင်္ဂလာတိ မျှပိတ်ကထပိတ်

ကာဂိုတ်—The word ကာ here is not the Pali ကာယ but means a case, an instance, service. Here ကာဂိုတ် = a case of death. Cf. တူခြင်ကိုကာဂိုတ်တဲ့ ကျောန်မရ=B. သေသည်အမှန်၍ရှုပ်ထွေး၏မလုပ်မခေါ်ရ = lit 'with these cases of death being troublesome I cannot work or eat.'

ကာလဂေဟီ—(Kala geer yeer)

ကာလကူးမြို့—Is a mistake for ကာလကူးမြို့ or ကာလအားမြို့

ကိုပို့ပျော်—Is a mistake for ကိုပို့ဖျော်. The word ပျော် is to be listless.

ကာလဆွင်တဲ့—(Kala smaw tñuer) should be ကာလသာဝါတဲ့.

ကြပ်—(Krop) near, near at hand while ကရပ် = to be near.

ကြပ်ညန်—Near is right. It is also used with reference to a person about to die or near death.

ကြ—The correct form is ကရု or ကရု့ or ကြ。 The use of the form ကြ is nothing more than carelessness on the part of the palm leaf writer to shift his style and write ကရု in full.

ကျောန်တဲ့—pronounced Kali-erng tlurng.

ကျောန်မြို့—to wait upon, to look after. ကျောန် = to work, to do and မြို့ = to pick up, take with the hand, hence an attendant. ကျောန်မြို့ may be taken to be the same as B. လျှပ်ကိုင်。

ထွဲပို့—is not to tear out but is used in the same sense as Burmese ထွဲပို့ = to roll over and over. It is often applied to describe the process of separating paddy husks from rice when pounded paddy is put into a fanning machine (B. ရုတတ်). Hence ထွဲပို့တဲ့ = to roll over and over and take out, that is, to separate.

ချုပ်စွဲ—This is a mistake for ချုပ်စွဲနဲ့ = to consult with.

ချို—means purple colour and ချို့သူ့ is a purple flower. The correct word for jasmin is အလျှို့.

ဂုံးထား—This expression as far as I know is never used for medicine, ဂုံး and ထား should not be combined. The word may probably be ဂုံးပရတ် = a medicinal root.

ဝကူးထူး—The expression imasmim Kule = မိုးဝကူးထူး only, the word ထူး being afterwards added.

ဂင်္ဂာ—should be ga noin ; in conversation it is called ga hoin.

ဝန်ခုတ်—The superscript (၁) in ဝန် is the final အဲ and not ခု. It should be pronounced gajaw and not gajam.

ဝရင်စွဲ—(gare-erū patēm)=to petition B. လျှောက်သာည် The noun form is ဂါတ်ဝရင်စွဲ. The P. āroceti, to inform would be မိုးဝရင်စွဲတဲ့

ဂေါ်ပိုင်တိ—The P. katheti=ပိုကာတ် only, the words ပိုင်တိ being added by the translator.

ဂိုင်ကော်—It is only when combined with ကော် as in ဘတ်ဂိုင်ကော် that it has the meaning to learn.

ဂုဏ်—Means a wish, desire, P. icchati. It is a mistake for ချမှတ်ခွန်. See also ကာသံ above.

ဂူစိ—This is not the word for heart but is used more with reference to the liver. According to Mon doctors the human body is divided up into 32 principal parts and the term used by them for heart is ဖြူနီးပြုစိ

while ဇူလိုင် or simply ဂူစိ refers to the liver.

ဂိုတ်—This is the principal lower garment of a man (Burman or Talaing). It is the B. ဂုဆို: The correct word to tear away from, separate is ရွှေထိ or ဂိုတ် the final letter ထိ being wrongly read for ယိ

ဂုဒ္ဓအလိုဒေသီ—See အလိုဒေသီ above.

ခဲ့ခြား—This correctly written should be ခဲ့ခုလို but some writers contract the ခုလို into ခဲ့။ The word ခဲ့=to be attached to, adjoining, (is frequently used with reference to a beehive being attached to a branch) and ခုလို or နှု=edge or end. Hence ခဲ့ခြား=adjoining or near the edge. Here the word ပြုစိ (=P. atavi) has been omitted and Mr. Duroiselle has taken the word ခဲ့ခြား to mean a forest. The expression ခဲ့ခြားပြုစိ = adjoining the edge of the forest, or, near the edge of the forest.

ခန္ဓထာဓာ—Should be pronounced ca non hta bah and not ca nah thabah. The above form is a contraction for ခန်ထာဓာ

ခမေး—I have not seen this word used in the sense 'to release' but I have found ခမေး to be the same as ဘမေး=to be bright. To release is မေး so that ခမေး has probably been wrongly copied for မေး or ဘုရား, cf Hasw: ဘုရား

1. ခမတ်—(ca mot) true; cf, ကော်မတ်, The P. niyama=မွဲလျှင်,

The phrase နမမတ်=by means of truth,

ချေး—This is a mistake in copying for ချေး

ခမွှား—(Com noh), an insect, P. pāṇa. There is something wrong about this. The word for insect is ချေး or ချေး, The word ခမွှား is used with reference to a cell or pod of fruit as in the jack or durian. B. အမြှောင်း

ခရောတ်—The corret word for sprinkle, pour is ခရောတ်။ ခြောတ်. The word ခရောတ် also means to smell as smelling salts, &c. It has nothing to do with ခရိုတ် which is quite differently spelt.

What Mr. Duroiselle probably means is the B. ရောက်ချောညီ=ခရောတ်ခွာက် that is the custom of dropping water drop by drop at some offering as a sort of witness or proof hereafter that such offering was made.

ခရောတ်ခွာ—This is the medicine for smelling, e. g., smelling salts. The Pali and Talaing do not agree.

ခေါ်—The correct word to anoint, or smear is ခိုတ် for the face, and သုတ် for the body. The word ခေါ် occurs in the expression ရွှေချော်ခေါ်ခေါ်=a very hot sun or day=B. အင်မတန်း

Here ခေါ် has probably been wrongly copied for ဝယ်, the first letter sometimes being carelessly written ၁

ခံ—I have not seen nor heard this word mean discard, abandon but in Maha Waw (မာဝဝိ) we have ခေပန္တွေ-နိဿာယ-ကာသာဝံ

" " "

ရိုကျိုးတဲ့-သွေခါန်-နှုံး

i. e., he set aside his priestly robes (in exchange for a new one). The P. apanet-vā does not agree with ခံ which may be a mistake for ပါ (to set aside) which is sometimes written as ပဲ

ဆုမလော်—This I understand is the same as ဆူကျူယီ which is the B. ရဗ္ဗာက် ချောပင်. The monkey is said to cry because it cannot climb up this smooth barked tree.

ဆူ—Any stick, log, or wood, not necessarily firewood which is အောတ်

ခီ—Another instance of the Burmese vowel ခီ being used for the Talaing ဧ. The word is not chim but ခီ (chi). It is sometimes also written ဆောင် or ဆောင် ဘာ

ရှိနို့ဂုဏ်တာတ်—This is a mistake in writing တာတ် should be တတ်.

တရု—Uncle, I have not yet come across this word. အေဇာ် and အေနာ် are generally used for uncle.

တရု or တြေ (taraw) = mad and တရုတ် or တြေး (trouh) = a male person.

တလေဓရန်—The word ဓရဝါ is a form of respect = master, while ဓရန် (pronounced a shón) is a priest who has no earthly desires but simply devotes his whole mind on the Laws of Gautama. B. ရုဟန္တ်

စု—by itself does not mean live but has the force of the B. ရှိ. The whole word is စုစု or ဒုစုစု, the letter စ or ဒု having been omitted in copying.

တူးသွေးစာ—(tiuer smav အေ). This is wrong, and is putting the cart before the horse. The sentence should either be တူးစာသွေးစာ (tiuer အေ smav) = the sun went down, or it should be တူးသွေးစာ (tiuersav အေ) = it is dusk.

တြေး—Who ever heard of a man being called trum in Talaing. The super-script း is the final သိ not ရှိ. It should be pronounced truh or trouh, but in conversation kruh or krouh.

တွေးတိ—to be fulfilled. In the example given the sentence should run thus —manomayā နှိမ်တွေးတိနဲ့တဲ့ not as given by Mr. Duroiselle.

မနောင်      မထောင်

"      "

နှိမ်တိ      တွေးတိနဲ့တဲ့

that is, on account of his wish being fulfilled.

တွေး—In the example တွေး &c., this is a mistake and should be တြေး. It is to be hoped that in the grammatical notes this error will not be overlooked.

တွဲ—should be pronounced tvoh and not tvam. The superscript (း) is the final သိ and not ရှိ.

The Pali katheti correctly translated should be ඊජ්‍යතාර. The original manuscript is wrong in using ගේ in the sense of to tell, recount. The word ගේ = to preach, as a sermon is the P. deseti.

ထာနිဝත්—(htangajaw) the superscript (၁) being the final ဆ and not ခ. ရුටිတූල්—does not mean 'to follow and come' which would be මත්දූල්. Here ရුටි = to observe and ගැල් = to come, that is, 'to observe to come.'

ရුටිපත් = to observe to follow,

အශ්‍රුම්‍ය—This is wrongly pronounced ව්‍යි is not slam but slaw. The superscript (၁) is not ခ but ဆ.

အශ්‍රුග්‍රැංජාවී—This error has been repeated for the third time see under အශ්‍රුංජාවී and also ද්‍රාංජාවී.

အශ්‍රුකුරුන්—lit. "the state which is without profit or benefits," and is similar to အශ්‍රුකුරුන් තුව්‍යෝවාන් given by Mr. Duroiselle in his notes. The Pali and Talaing given do not agree. P. adhamma = အශ්‍රුප්‍රජ්‍යත් and not as given by Mr. Duroiselle. The word ගෙ is pronounced hamuer and not hamai.

အශ්‍රුවී—This is not the word for kingdom. P. rajjam = အශ්‍රුංඡීර් (deer doh duri reer)

နුයි—This does not mean to apply medicine, etc., which is එළුයි. For P. asificati see චෙළුයි. In the example given මුයි should be මුජි.

P. te	asittam
တායා	මුජිහා
My master	did you remember.

නී—is pronounced nu er and not nai.

නුදෙයිත්—(nu er lveh). In the example given the words චායාවුරිත් have been wrongly copied for චායාවුරිත්. In palm leaf manuscripts the word එළි or ඕව is often written ඕව to avoid its being misread for ගෙ. So also, we have එළි or ඕව written as ඕව to avoid confusion with ගෙ.

උගේෂ්‍රි—Here the superscript (၁) in ගේ is the final ဆ and not ခ as given by Mr. Duroiselle, Klem should be altered to klé or klay.

උද—by itself does not mean to listen to, the whole word is එදුද or එදුද and therefore උද is a mistake for එදුද.

උල්ද—(pa nyong or pa නො) Mr. Duroiselle is wrong here, එල්ද is not the P. pañha. The word ඉ = to do, make, and ල්ද = a pretence, that is, to make a pretence (of doing something). We sometimes hear the expression එකු එඛුල්දුලුගුරුත් (pa uer, pa pa nyong myu urk) applied to a person who is well dressed and swaggers about. "Oh my father ! do not make a pretence of being a myook."

උල්දුවාන්—to make a pretence of asking (question). P. pañha = එවාන්

උත්ද—In the example given එකාඟ, etc., Mr. Duroiselle says that ඕව = P.

Kāla and refers to कारिति as proof in support of his argument. The force of का has already under कारिति been explained. Here however का is a mistake for काय.

တိ—does not mean to ask leave, but to cause to know, make known. The Pali and Talaing do not agree, P. āpucchati = ပါန်စာခေါင်. When တိ is preceded by ဝရ် the phrase ဝရ်တိ = to petition B. လျှောက်သည်. When a petition is addressed to an officer the form ဝရ်တိ is used, and to a priest ငလွှာစ် တိ.

ပို၏—is to raise not to explain. The Pali given is āroceti for use of which see my note on အရင်တို့။ Here the word ပို၏ has probably been misread or wrongly copied for ပို။

006—Another instance of carelessness in copying. The correct word is 0306, the letter 3 having been omitted.

ଓ়ଙ୍ଗ—How can any one cause a Lent? Mr. Duroiselle has completely erred in translating this expression by “to cause to be a Lent,” to spend the Lenten season (in, at). I have not heard the expression used in the above sense but I have heard ও়ଙ୍ଗ or ও়ଙ୍ଗଲଙ୍ଗ—(pa doh glurng woh) = to have boat races at the end of the Lenten season; or else, we may have ও়ଙ୍ଗଧି = to have a pwé at the end of the Lenten season. Mr. Duroiselle has tried to force a meaning here by translating ও়ଙ୍ଗ as “to cause to be a Lent” and has then taken the P. vassāvā-sam vasati = lo spend a Lenten season and tried to combine the two. To spend a Lenten season should be ସଙ୍ଗ. Thus we have

P. Vassīvasam	vasati
॥	॥
၂	၃၄၅

and therefore ~~one~~ must be wrong.

**ցոց**—Mr. Duroiselle has read this word wrongly. The word ցոց means to cover up and not to send away, dismiss, &c. What he should have given is ցոց=Պ,սյոյետի-[note the difference in the final letters].

ပဲကာလ—(pa du er kāla) not padai kāla.

၃၇—This is also an error in reading, and should be ၃၇ which is the Pali *ghaṭeti*=to combine. Mr. Duroiselle then introduces “cf Hasw: တရိ to join.” Haswell in his vocabulary is absolutely wrong in giving တရိထင် as=to join with paste or glue. (Bur.) တရိထားသည့် The (Bur.) တိ here does not mean to stick with paste but to be adjoining or near, and therefore the meaning should have been “to put or place near.”

**ပြောစ်အာ**—Here **ပြောစ်**=to approach (Bur) ချို့သည်။ ချို့ကတ်သည်။ The expression **ပြောစ်အာ**=to approach and return and go, that is, to approach (near something) and then return and go.

The B.  $\text{G}^{\circ}$  given by Mr. Duroiselle is the T.  $\text{G}^{\circ}$  and not  $\text{G}^{\circ}\text{G}^{\circ}$ .

မြောလ်ထောလ်—To approach and enter.

—to crumble, to decay and crumble, to break down, fall to pieces. මුද්‍රා  
=B. මුද්‍රාසුම්. We also have the expression සුමුද්‍රා—(lerm praw) = to be destroyed. The Pali jirati and the Talaing do not agree.

ဗန်တုန်—(plon toin) once more, once again, and not but, now, &c. The Pali pana is wrong ; it should be puna.

ဂျိ—(plin). This is a mistake for ဂီ or ဂုဒ (plim). The word ဂီ = to twist to roll as in ဂူလိ—to twist a rope ; ဂူမဝါ=to twist the eyes, i.e., to hypnotise, mesmerise as a juggler, to practice legerdemain.

လွှာဗျိ—This should be လွှာဗီ that is to twist and roll over.

ဂူကော့—The word ကော့ should be pronounced klè or klay and not klem, The superscript (း) is the final ဆ and not ဒ.

ပတ်လတက်—Here ပတ် is a mistake for ပိုက် or ပိုက် = to dress, while လတ =to follow. The word ပိုက် = to dress, B. ဝတ်သည်, and လတက် =to cover up (with a cloth) B. ချုံသည် ; hence to dress, to put on clothes.

ဗုတ်တူ—(ber not tñuer)—does not mean "about one day." The Pali ekadivasa shows that the correct expression should be ဗုတ်ခုတူ. This shows that ဗုတ်တူ has been wrongly copied for ဗုတ်ခုတူ.

ဗုပ်—This is wrong, it should be ဗျိပ် = to pervade. See the same error under ကိုယ်ဗုပ်.

ပြဇ္ဈာန—The word ပြ should be pronounced bruer and not brai.

ဗုမြိုလတံဗြိထိုံ—The superscript (း) in တံဗြိ and ံ is the final ဆ and not ဒ and should not be pronounced tem and vvam but tay and vuu or wu. The ံ is not bvai but bvuer.

ဗုမလ်—The superscript (း) in လ် is the final ဆ and not ဒ. It should be pronounced bvuer meer lav.

ဘိုက်ဆက်—Towards the end of this para ဘိုက် is said to be used in the sense of "food." This should be ပြုဘိုက် and not ဘိုက် alone.

ပေလိရောင်ရှိ—Is not exactly the P. anurūpena which is invariably translated as ဓာမထိုက်ဖြူက် = worthily. The Pali yathārahām is also sometimes used for ဓာမထိုက်ဖြူက်. I have come across the P. anukappeti used for ဓာမဝင်ဝေါင်.

ဗုံ—This is not the same as မေး It is to be hoped the grammatical notes will explain this important word correctly. The Burmese equivalent given here—ခါးသော်၊ ကားမူကား is not the equivalent usually given by Mon priests.

မေ့ခြုံ—Is also used with the meaning "to loiter about or wait with the intention of taking or snatching something."

P. pari—gaṇhāti

||      ||

T. မင်္ဂလာ

ကော်

||

||

B. စောင့်ရှောက်—

ကျ

မရိန်အကိတ်ကော်—Mr. Duroiselle has read this wrongly, it should be မရိန်ခဲ့တ်ကော်. Having gone wrong at the start he chops up ရိန် and makes it equivalent to ခဲ့=to tie because ခဲ့ also=to tie. To complicate matters the Pali sahagata is made to be equivalent to this long string of words. The P. sahagata, together with=ကျော် only and ခဲ့, wrongly read as ခဲ့, means to be.

**မတ၍တရသိနှင့်ရ—**The Pali for this is not tathā but should be evam tathā. P. evam=ရ and tathā=မတ၍တရသိနှင့်ရ. The ရ is said to be equivalent to အလား but it should be ဦး၌.

**မဒေါးသန—**The Pali and Talaing do not agree. P. pañita—T. မခြုံ. The correct Pali word for မဒေါး is P. āma=yes, truly.

**မရှု—**This is either a misprint or wrongly copied, as there is no such word in Talaing. It should be မရှုံး

**မရှုံး—**See remarks above. It should be မရှုံးမ

**မထိ—**In the example taken from U. O. K. the word ထိ is in the wrong place. The sentence should run မထိကောနိုက္ခစ်သန္တိမန္တိကိပ်

**မူနိသွေးရေး—**Mr. Duroiselle has gone wrong again in trying to make out that သွေး=fruit. The word သွေး is a mistake for သွေး၏=to be. The sentence should be မူနိသွေးရေး (mu phov snom rau).

**ထဝါ—**Both Haswell and Duroiselle give 'if,' as the meaning of this word, but I have invariably found it to be equivalent to the Burmese အကယ်၍=however. P. sace cf. ခြောက်ငါးကျေမဲ where we have သခေဟာတိ=အကယ်၍ဖြစ်ဆုံး Duroiselle in his Pali vocabulary gives P. sace=if, while Moung Ba and Moung Tha Din in their dictionary give P. သခေ=B. အကယ်၍. Surely အကယ်၍ cannot mean "if," for if it did why is it invariably followed by သွေး (if)? He also states that at the end of a sentence beginning with ထဝါ, မူနိ (if) is often used, this therefore proves that ထဝါ must be equivalent to B. အကယ်၍=however.

Again the P. tena hi is given as being equivalent to ထဝါသိနှင့်. This is wrong for it should be shown as P. tena hi=သိတိ၍သိနှင့်.

Nowadays however in conversation ထဝါ is sometimes used for "if," but it is never used in this sense in manuscripts.

**ထိပိတာဘီ—**This is I think a mistake for ထိပိတာဘီ

**ထိ—**This word also written ထိဝါ means to carry, and not 'yes'. The word ထိ is not the same as ထိုး=ဟောအဲ, the two being differently spelt. ထိုး is the Vocative case and is equivalent to Burmese အိုး. Colloquially however ထိုး is sometimes used as "Yes."

**ထိ—**This should be pronounced as yu-er and not yai.

**ထိကလင်—**This is wrongly copied. In the example given

P. na—sujā—mi

||      ||      ||

အ ကလင် ကို

that is, the sentence should be ပို့ခဲ့ဟကိုကလင်ရ. This shows that the word ထိ has been wrongly written for ကို. The Pali na sujāmi correctly translated should be (ပို့ခဲ့) ဉာဏ်ပို့ကလင်ရ.

**ထိနှင့်—**The Talaing translation of P. Sampaticchāmi taken from U. O. K. 9, is not grammatically correct. It should be (ပို့ခဲ့) ဉာဏ်ကိုယ်ရှင်လင်ရ. The Burmese equivalent for this word would be ဒီးထိပ်ခြက်.

တား—In the example given P. na pucchati kira is taken by some to be equivalent to P. pucchati na kira which in Talaing would be ဒုမသွာန်ဝါယံကိုယ့်မိမိ  
ရောင်တား=B. မေး၏မကြားဘူးလား, that is, ‘the thing asked did you not hear, or,  
did you not hear the question asked! Here တား would be an interrogative affix.

ရှာနာမိက်—is the B. ဆုတောင်းသည်, i.e., to wish well cf. Hasw.

ရှုနှုနိက်—lit. to buy (something) to sleep. The phrase therefore must have been wrongly copied. It should therefore be ရှုနှုနိစိတ် if it is to be serious, or grievous.

နှုနိရ—The Pali evam is နှုနိ only and not the whole phrase, and therefore နှုနိ might be omitted.

လမထိ—The ၁၁ should be deleted if the meaning is nose. The word လမထိ, လမထိ or လျှေထိ=now. P. idāni.

လမောင်—lit. to breathe more freely. The term is used with reference to a sick person who is in a very weak and restless state. The only sign of any improvement is his breathing which becomes more even and he breathes more freely. The present form is လမောင်. The phrase လမောင်ခိုစိတ် I have also heard explained as ‘to be more easy in mind after some great anxiety.’

လမောင်လှိုတ်—These two words as far as I know never come together like this. The full stop or pōt has been omitted. It should be လမောင်။ လှိုတ်, etc. cf. ဉားမယ်ဂုဏ်လမောင်။ လှိုတ်ရှုပါခေါ်ဖြတ်နို။

လထံကျို—This has been wrongly read, the superscript (၅) in ကျို is the final ၁၁ and not ၄. Klem should be klè and klay.

လသီ—does not mean to lie down. The Pali and Talaing do not agree. When a Burman or Mon is seated with his legs folded under him the act of stretching out his legs and placing them in front of him is called လသီနိုင် or ကသီနိုင်. The present form is လသီ။ B. အျေဆင်းသည်။

လိုဝါ—Does not agree with the P. Kilamati which would be ဂုဏ်သူက်=to be uneasy in mind, hence the feeling of weariness. The word လိုဝါ means only ‘a sign.’

လျော်ဖို—The reference to S. R. D. 126 where လျော် is said to be a man of the third class, the expression is not လျော် by itself but should be ရှုပါလျော်. They were afterwards known as ကောန့်မြှုတ်. The classes referred to a P. seti=gahapati, gahapati=သမ္မတ, vanijja=ဉားမြှင်လျော်ကို။

သူး—by itself does not mean speak to, recite. The manuscript from which the example has been taken, has been wrongly copied. The Pali ajjhabhāsi= ဓမ္မတဲ့ရ only or it might be expanded thus ဓမ္မတဲ့သူးရဲ့. This shows that the word ရဲ့ to preach, recite, has been omitted. Here သူး= clearly.

သူဝါ—is not to blame, but to cut off, separate, give up, cease to do. B. ဖြစ်  
See below.

သူတိတော်သရပိ—This is a serious mistake. First the superscript (၅) is the final ၁၁ not ၄. Secondly သရပိ has no meaning; it has been wrongly copied for သရပ် or သရမ်, thirdly the word သရပ် or as wrongly shown သရပိ should be coupled with ပါပ် and not be mutilated as above.

In the example given တိလှုမသူ၏တော်သရေပါပ် the word သရေပါပ်=a fault, evil deed and သူတော်=to cut off and be lost, i.e., to cease to do.

သမတ်—This should be သမတိ, the final letter being တိ and not တ်။ သမတိ=the same as, P. Sama. သမတ်=small, young, cf. တုပ် သူတ် which is the same.

သူရိစာ—This should be အာသူရိ. See notes under တူသူရိစာ။

သူတိပြုပ်—According to the Pali a thick jungle is right, but according to Talaing သူတိ or သေတိ = to remain and သူတိပြုပ် or ပြုပ်သူတိ =the jungle remaining.

၃,၁၂—This is a mistake for ၃။

W. G. COOPER.

## II

### TALAING NISSAYAS \* SOME FURTHER CORRECTIONS.

When working at my "Talaing Nissayas," which appeared in Vol. III, Part II of this Journal, I was labouring under a disadvantage: I had but one copy of the *Dhammapada-atthakathā Nissaya*, moreover, I was sent only one proof of the few first pages, lack of time preventing the Editor from sending me the rest. † Since then I was given the loan of another copy of this *nissaya*, which has enabled me to correct the following errors:—

လျောင်အမေနတ္ထာ (p. 114), read, လျောင် etc. ။

အလိုအသီ (do), read, အလိုအသီ။

ကာလ ရှိန်။ (p. 117), read, ကာလအ ရှိန်။

ချုပ်ရွှေပ် (do), read, ချုပ်ရွှေန်။

ဂုဏ်ပ (p. 118), read, ဂုဏ်ပဲ။

ရှုပ် (do), read, ရှုန်။

ရှုက် (p. 119), read, ရှုက် cf. U. O. K. 21 ခရောင်မတ်ဓါတ်ကြိုတိတော်တဲ့။

ဓမ္မီ, under (120), dele: this is a hybrid; and read: ဓက် =P. cakka, a wheel, ကို, a cart, carriage.

ဓမ္မတ် (p. 121), read, ဓမ္မ ဖုတ်။

ခံ (p. 122), read, ခံး။ခံးတော်တဲ့ = "having kept by," that is, having discarded; cf. B. ဝန်ထား၏။

ခီ (do), read, ခီ။

တရု (p. 123), read, တရု။

ဒရု (p. 127), read, ဒရုအံ; another form is ဝရုအံ; the usual colloquial=ဝရုအံ။

ဒြိုက် (p. 128), read, ဒြိုက်။

ဇော်ဘတ် (do), dele ဇော်, and read, ဇော်ဘတ်။

\* In fairness to both Mr. Cooper and Mr. Duroiselle it should be added that Mr. Duroiselle sent in his corrections a little later than Mr. Cooper's criticisms, and that in all probability both these notes were written quite independently of each other. —EDITOR.

† Mr. Duroiselle might have added that the complete printed article was sent to him before publication and that he himself prepared the list of misprints. —EDITOR.

တော် (*do*), this is probably တော်; but V. E. P. or p. 77, has also လော်, which may be a printer's mistake.

နွှေ့ဂြိုလ် (p. 131), read, နွှေ့ဂြိုလ်။

သို့သွား (p. 138), read, သို့သွား။ here သွား, not in Haswell's, means, the palms of the hands ; cf. B. လက်ထိတိထက်တင်သည်။

ရှင်နွှေ့တ် (p. 139), read, ရှင်နွှေ့တ်။

အူး (p. 141), read, အူး။

သမတ် (p. 142), read, သမတ်။

သွှေ့တ် (*do*), read, သွှေ့တ်။

သွှေ့တ်ပြုပ် (p. 143), read, သွှေ့တ်ပြုပ်။

CHAS. DUROISELLE.

### III

## THE TRANSLITERATION OF OLD BURMESE INSCRIPTIONS

There is a good old proverb about the cobbler sticking to his last, and if I venture to make some comments on the above mentioned subject, it is, I need hardly say, with the greatest diffidence, as befits my position in relation to the matter. I am not a Burmese scholar and I should not have dared to approach the subject, were it not for one circumstance which must serve as an excuse for my temerity in doing so. It is this, the beginnings of Burmese and Mon epigraphy, so far as known to us at present, go back to one common source. The alphabet is the same. It was a Southern Indian alphabet, used for we do not know how long as the national Mon script, (and also of course for writing Pāli), which in the 11th. century A. D was applied to the writing of Burmese.\* Obviously, therefore, in attempting to form an estimate of its ancient Burmese values, we are bound to consider the evidence that may be derived from these two sources as well, for it is strictly relevant to the enquiry.

There has been much vague talk in the past about the process by which (as it has been expressed) the Indo-Aryan alphabet was adapted to the special requirements of the non-Aryan languages of Indo-China. Starting from the modern forms of these languages, which until comparatively recent times were the only forms at all well known, it has been too readily assumed that the old Indian scholars who first made use of their alphabet for these new purposes went to work in a most revolutionary way. It was supposed that they gave new and arbitrary values to a great many of the old letters and combinations of letters in order to fit them to the alien phonetic systems which they were endeavouring to express. Personally, I have always been inclined to have my doubts about this theory, which seemed to me quite improbable *a priori*; and a study of the oldest available Mon inscriptions has convinced me that it was very much exaggerated. There has been some modification, no doubt, but not nearly as much as was formerly imagined. The conventional values exemplified in the modern spelling

\* It is to be regretted that Burmese national pride should take offence at the idea of certain elements of Burmese civilization having been received through the Mons. (v. p. 192 of Vol. III, Part II, of this Journal). But we are here concerned with the ascertainment of historical facts, and all such national and racial prepossessions must yield to the weight of evidence. So far as regards the Burmese alphabet, it is abundantly clear, from the very shapes of the letters themselves, that it was derived from a *Southern* form of the Indian alphabet and therefore could not possibly have reached the Burmese overland.

of such a language as Burmese, e.g., the use of ◊ (originally c, the palatal surd) for s, q (r) for y, and ω (originally s) for the English th, not to speak of the arbitrary values of the final consonants—these peculiarities are, for the most part, not the result of an originally made artificial adaptation of the Indian alphabet. They are phenomena of a secondary kind, the products of eight centuries of phonetic change and revision of orthography within the language itself.

The same is true of the Mon values. The early Mon inscriptions tend to show that the ancient pandits endeavoured in the main to write the language phonetically, according to the Indian values of the letters. In a great measure they seem to have succeeded in their attempt. It follows, therefore, that in general we shall be on the safe side if we adopt Professor Duroiselle's principle of transliterating the old inscriptions according to the Indian values of the letters of the alphabet and disregarding their modern Burmese and Mon values. In my opinion that is a thoroughly sound principle to start with and its application will open up the possibility of a scientific, historical study of the evolution of these two languages.

But while accepting the principle, I would point out that the results thus obtained will remain more or less provisional in respect of some matters of detail until the language thus transliterated has been carefully studied as a whole in its various successive phases and also systematically compared with the cognate languages. In other words, we need a scheme of transliteration in order to make a beginning of such a line of research, but it is quite possible that we may be called upon to modify it to some extent as we proceed. The results of comparative study will probably impose that necessity upon us. For though, as I am convinced, the early pandits tried to write the Indo-Chinese languages phonetically, that is not to say that they were always perfectly successful. Moreover there is reason to believe that they did intentionally admit a certain number of conventions, of a comparatively moderate and not very startling kind.

I may perhaps be allowed to give parallel instances from a language of another family. Some time or other in the early Middle Ages, Indian scholars began to write Old Javanese in a form of the Indian alphabet closely allied to the old Mon-Burmese form. Now the comparative study of Javanese in its successive phases and of a considerable number of the allied languages of the Indonesian section of the great Malayo-Polynesian family has been diligently pursued during the last half century, mainly by Dutch scholars who have thrown a flood of light on the evolution of the languages of that family, so that their phonetic system may now be regarded as thoroughly well ascertained. It is therefore possible to speak with some confidence about the phonetic values of the Indian symbols used in the old Javanese inscriptions: We can, as it were, get behind the written word to the real sounds intended to be expressed. Modern Javanese has no ν and the sound is very unusual in the cognate languages, so that the Dutch scholars who transliterated the old inscriptions concluded that when the pandits wrote ν they meant to indicate the sound of w. Accordingly in their transliteration the Dutch scholars have rendered the Indian symbol in question by w, and there can be no doubt whatever that they were right in so doing. Similarly the old inscriptions habitually express a final n (English final ng) by the *anusvāra* symbol (generally transcribed m). As this was also obviously a mere convention, it has been neglected in transcription in favour of a more precise symbol.

In the case of Burmese it is quite likely that the progressive study of the language will necessitate several such modifications in transliteration. I venture to think that even now it would be well to write w instead of ν. The former is much the commoner sound in the languages of Indo-China in general, and until the contrary is proved it seems reasonable to assume that it was the sound in Burmese eight hundred years ago, no less than it is now. Further, the Indian symbol itself, even in Sanskrit, is sounded as w in certain positions, and there is really no adequate reason why it should not be so transcribed in Old Burmese.

I may add that in the earliest Mon inscriptions this symbol is commonly used to form the diphthongs *āw* and *ow*, which the later phases of the language have re-written *au*. There can be no ground for supposing that the final here was a *v*. It must have been the ordinary, half-consonantal *u* which forms the second part of such diphthongs when the main stress is on the first part. It is quite in accordance with this view that Mon similarly formed diphthongs with *y*, which in later times, to the great annoyance and confusion of transliterators, was supplanted by the more quickly written *ai* symbol. Curiously enough, neither this latter nor the *au* symbol appears to have been in use in the earliest Mon inscriptions, though both are of Indian origin undoubtedly. Perhaps the reason is that the sounds they represent do not occur in Pāli. They are common enough in Sanskrit and some other Indian languages.

It seems to me undesirable to render *o* by *ç* and *ø* by *çh*, *ç* is used by many French scholars to transliterate the Indian sibilant for which we usually write *s*, and confusion would result from its use for the first and second letters of the palatal *varga*. Why not stick to *c* and *ch*, as in Sanskrit, for the present? Apart from these cases, I find myself in complete agreement with Professor Duroiselle so far as the rendering of the individual consonants is concerned. As for the un-Indian combinations of consonants, such as *g* in Burmese, I am sure he is on the right line in rendering them literally (in this case by *rh*). What the precise sound at that remote period may have been, future investigation may perhaps establish, but it seems open to some doubt at present, and anyhow a spelling like *sh* is just as conventional as *rh* it is merely the substitution of an English convention for the old pandits' device.\*

In the matter of the vowels I think there is no real difficulty except the case of *ui*. This appears to have been an artificial makeshift devised to represent one or more of the neutral or indeterminate vowels (something like the English vowel found in such words as "bird", "cur", and the like, where of course there is no real *r* at all in Southern Standard English pronunciation). It is a question whether one should simply follow the pandits' convention and write *ui*, while realising that this is a pure convention and not the representation of an original diphthong, or whether it would be better to neglect it altogether and write some new convention of our own, e.g., *ö*, *ü*, *ó*, or the like.† This is obviously more or less a matter of taste, and fancy. But I would observe that at present we do not know precisely how this *ui* was intended to be pronounced. It might perhaps be safer to write it, provisionally, *ui* as the old pandits did.

It is a curious fact that this *ui* is very rare in the oldest Mon inscriptions. Yet there is reason to believe that the sound which it was afterwards used to express already existed then in Mon, for in the early inscriptions the words in which the symbol subsequently occurs are written inconsistently in all manner of ways, the vowel in one and the same word being often expressed variously, e.g., by *i*, *u*, *e*, (the inherent) *a*, and even such a conventional combination as *ei*. It seems pretty evident that in these cases the pandits' endeavours to write phonetically were not crowned with complete success. But why does *ui* appear in the Burmese inscription at the Myazedi pagoda and not (except very rarely) in the Mon ones of the same period, where it would seem to have been so badly wanted? That is a question I am unable to answer at present.

There can be no doubt at all, in my opinion, that *o...ø* represent *o* and *æ*—*ö* stands for *au*: their order in the alphabet is enough to prove that, and they should, at any rate for the present, be transliterated accordingly. For the pur-

\* May I say incidentally, though it does not directly concern the matter in hand, that I find myself unable to subscribe to Professor Duroiselle's argument about the pronunciation of "Sciam", Sangermann's rendering of the well-known and much discussed ethnic name? How else can you render the sound *sha* in Italian spelling than by *scia*?

† I do not much like Professor Duroiselle's *ö*, it suggests either a close, or an accentuated *o*. I do not think that the sound can have been at all like that in the Mon of 1100 A.D.; and I see no reason to suppose that in the contemporary Burmese the symbol had a different value from the Mon.

pose in hand these are not, as Professor Duroiselle styles them, "vowel-combinations", they are old-established symbols of the Indian alphabet, having definite values as such. With their previous history in India we are not here concerned, and it seems safest to accept them with their Sanskritic values, leaving the future to decide such niceties as whether in Old Burmese the *o* was an open sound (as in Eng. "more") or a close one (as in Eng. "hope"), and the like. Similarly I think that for the present *a*—might well be written simply *e*, and *ā* (if it occurs in the old inscriptions) *ai*, according to their respective Indian values. It will always be possible to modify such details later on, when the evolution of the Burmese phonetic system has been more closely studied. I should not suppress the inherent *a* in such a word as အော်. I should write *Iway*.

The study of the Burmese language on the historical and reconstructive system outlined by Professor Duroiselle in his valuable article will not merely be a great advance in Burmese research alone, it will also be a step towards the comparative investigation of the whole Tibeto-Burman family of languages. At present comparatively little has been done in that line of research. In 1896 Mr. Bernard Houghton contributed to the Journal of the Royal Asiatic Society a paper entitled "Outlines of Tibeto-Burman Linguistic Palaeontology", which is of great interest and value but lacks a systematic exposition of its phonetic basis such as modern linguistic methods rightly demand. When the phonetic laws governing the relations of the various languages of the Tibeto-Burman family have been thoroughly investigated and established, scholars will be in a position to work back towards the prehistoric forms of the words that are common to the several branches of that great family. When that has been accomplished, it will perhaps become possible to define the precise nature of the relationship which exists between it and such other linguistic groups as Chinese, Tai and Karen. At present all this is very nebulous, and the comparison of individual words in these several languages is still premature and more likely to lead to the discovery of mares' nests than to any safe or positive conclusions.

C. O. BLAGDEN.

### A COMMON BURMESE CIPHER

Ciphers in Burmese are ordinarily spoken of as ကျေးကြေးမှုးကြေး. What ကျေး မှုး may be I do not know but the following ကျေးမှုး မှုး may perhaps be of interest to the members of the Burma Research Society.

A ကျေးမှုး is a cipher for substantive letters only : to form words, therefore it will generally be necessary to employ it in conjunction with a cipher for the vowel or consonantal symbols. Such a cipher is what is commonly called the ကျောက်စာကြေး or ကုန်ဘာသာရွင်ဘာသာ, sometimes employed by itself or sometimes in conjunction with the ကျေးမှုး.

Here are two formulas for the ကုန်ဘာသာရွင်ဘာသာ, of which the first is incomplete

၆-မှာသဝေ။  
တိုးကြီး-၂-တင်။  
င-မှာတရွောင်း။  
သတိလျှင်-၇။  
ချလျှင်-၁-စီး။  
ကိုမှာဝဆွဲ။  
င-လျှင်ဆံခံး။  
ဝါ့လုံးကြီး။  
လုံးကြီးဝါ့။

This is not explanatory to anyone who does not already know the cipher ; moreover it makes no provision for several of the symbols. The following is complete or self explanatory.

କ୍ଷେତ୍ରାଳୀଲାଗନ୍ଧିଃ॥  
 ଦୁର୍ଗାବିନ୍ଦିଶାଖାର୍ଣ୍ଣାଃ॥  
 ତବ୍ରିତ୍ସାହାରକ୍ଷେତ୍ରାଳୀଲାଗନ୍ଧିଃ॥  
 ଶ୍ରୀଲାଲାଚିଂଦ୍ରିଃ॥  
 ରେଣୁକ୍ଷେତ୍ରାଳ୍ପାର୍ବତୀଃ॥  
 ଗମ୍ଭୀର୍ଯ୍ୟଶାକ୍ତିଃ॥  
 ଅତିକାଲ୍ପାଲୀକୁଳିଃ॥  
 ବିଶିଥୁର୍ବୁଦ୍ଧିଃ॥  
 ଦୂର୍ଲଭାମେରୀଚନ୍ଦ୍ରିଃ॥  
 କୃତିକ୍ଷିଣିକଶର୍ମିଧୂର୍ବୁଦ୍ଧିଃ॥  
 ଶୁଲ୍ଲୁଦି-ଚ-ଶିଃ॥  
 ଗମ୍ଭୀର୍ଯ୍ୟଶାକ୍ତିଃ॥  
 J-ଯୁଗାଲ୍ପାର୍ବତୀଃ॥  
 ଲ୍ଲୋକ୍ରିଃତାନ୍ତିର୍ବୁଦ୍ଧିଃ॥  
 ଢ-ଲ୍ଲୁଦିଶବ୍ଦେଶର୍ବୁଦ୍ଧିଃ॥  
 ତାତ୍କାଳିକିଃତାନ୍ତିର୍ବୁଦ୍ଧିଃ॥  
 ତାଜ୍ଞାବିନ୍ଦିଶାଖାର୍ଣ୍ଣାଃ॥  
 ଧ-ଲ୍ଲୁଦିଶାଖାର୍ଣ୍ଣିଃ॥  
 ଜୋବାନ୍ତିକଷ୍ଟେରେବୁଦ୍ଧିଃ॥  
 ତାକ୍ଷେତ୍ରାଳୀଲାଗନ୍ଧିଃ॥  
 ପ୍ରିଣ୍ଟର୍ବିନ୍ଦିଶାଖାର୍ଣ୍ଣାଃ॥  
 ଏ-ଶ୍ଵେତାର୍ଣ୍ଣିଃ॥  
 ଓ-ମୁଖରେବୁଦ୍ଧିଃ॥  
 ଯତିଲେଲାଲ୍ଲୁଦିଶାଖାର୍ଣ୍ଣିଃ॥  
 ଜୋବାନ୍ତିକଷ୍ଟେରେବୁଦ୍ଧିଃ॥  
 ଦ୍ୱ-ଶ୍ଵେତାର୍ଣ୍ଣିଃ॥  
 ପଦ୍ମକାନ୍ତିର୍ବୁଦ୍ଧିଃ॥  
 ରାତ୍ରିତାପିତିର୍ବୁଦ୍ଧିଃ॥  
 ଜୋବାନ୍ତିପଦିଶାଖାର୍ଣ୍ଣିଃ॥  
 ତରେଶାଖାର୍ଣ୍ଣିଃ॥  
 ଫୋର୍ମିପ୍ରିଣ୍ଟର୍ଲେବେବୁଦ୍ଧିଃ॥  
 ତାଷ୍ଟେଫୋର୍ମିତିଥିଃ॥  
  
 କୋଣ୍ଠିଶାଖାର୍ଣ୍ଣିଃ॥  
 ତାଜ୍ଞାବିନ୍ଦିଶାଖାର୍ଣ୍ଣିଃ॥  
 ପଦ୍ମକାନ୍ତିର୍ବୁଦ୍ଧିଃ॥  
 ତାନ୍ତିର୍ବୁଦ୍ଧିଃ॥  
 ଲ୍ଲୋକ୍ରିଃପଦ୍ମକାନ୍ତିର୍ବୁଦ୍ଧିଃ॥

သုတေသနမြတ်စွာ။  
 ကျောက်စာရေးနည်း။  
 စာက္ခာနည်းကို။  
 သည်နည်းပိုတု။  
 နှစ်လုံးပြု။  
 တို့ပမာ။  
 ဦးယက်ာကို။  
 သေချာမဆုံး။  
 မိတ်နှစ်လုံးဝယ်။  
 ဟူဘုံးမြိုက်။  
 မေကုန်ထာည်း။

*Key:*

- ချ e.g. ၁

ထုံးကြီးတင် e.g. ၂

ထုံးကြီးတင်ဆံးပါ e.g. ၃

တရာ့သင်းငင် e.g. ၄

နှစ်ရာ့သင်းငင် e.g. ၅

သဝေထိုး e.g. ၆ က။

အထုတ် e.g. ၇

ထပင်း e.g. ၈

ရရှစ် e.g. ၉

ဟထိုး e.g. ၁၀။

နောက်ပြစ် e.g. ၁၁။

ဝဆွဲ e.g. ၁၂

another ထုံးကြီးတင် e.g. ၁၃။

I will now give two formulas for the  $\text{q}:\text{n}:\text{m}$ : The first has the more claim to metre : the second is the clearer.

The first is :—

କାଳିଗୀତାଃଗା॥  
 ଶ୍ରୀଲିଙ୍ଗିଏ॥  
 କେଣ୍ଟିତ୍ରିଷ୍ଟିଖି॥  
 ଅଯ୍ୟଗୀମ୍ଭି॥  
 ଅଭ୍ୟାସ୍ୟ॥  
 ପଦ୍ମପଦ୍ମି॥  
 ଲୋକାମ୍ଭା-ଲ୍ଲୁ॥  
 ବାଜୁଗୀମ୍ଭି॥

နှုတ္တယူ။  
 အငြာမူကားဖွံ့ဖြိုး  
 နောများကော်။  
 တစ်ကိုတစ်ပင်။  
 တပ်မြီလျှင်သော်။  
 ပရှိုင်လျှော်၏။  
 နှစ်ဖော်နှစ်ခု။  
 အကိုရှုလော့။  
 သုံးကိုနှစ်ဆင့်။  
 မမှာသင့်၏။  
 ထကိုဇူး  
 နှစ်ဖော်ချေလော့။  
 ပမဲ့နှစ်ဖော်။  
 ရလျှင်ခေါ်၏။  
 လမှာဘတမူ။  
 ၆-သာရှုံးတူးနှင့်။  
 ဝမူသတ္တတ္တမင့်။  
 နှစ်ဆင့်မြှုပင်။  
 သလည်းရှုံးကို။  
 နှစ်ဆင့်ဆို၏။  
 နောကိုနှစ်ဆင့်။  
 ဟန္တ့်သင့်လိမ့်။  
 အကားကြုံကြော်။  
 ဆုံးလျှင်ပေဘုံး။  
 သဝေဇာမျိုး။  
 ဝန္တံ - နိုကို။  
 လေးလုံးထိုးသည်။  
 ရှေးမှိုးရွှေးကဏ္ဍးပင်တည်း။

The second formula is :—

အမိကိုက ထဲ  
 နှစ်ကိုဘာ။  
 ကော်မြှေးနှင့်  
 အယွှကိုမူ မအ ယူ။  
 ဆမူပမဲ့  
 သောများ-ညျှေး  
 သတ္တကိုမူ နဲ့ နဲ့ ထဲ  
 အငြာမူကား မြှေး  
 ထဲ

နောမှာ ပြု  
 တစ်ကိုတစ်ပင်ဖြီသော ပဲ လျှော်၏။  
 နှစ်ဖော် နှစ်ခု၊ ပေကိုရှုပေး  
 သံးကိုနှစ်ဆင့်၊ ပမာသံး၏။  
 ယကိုယူနှစ်ဖော် ချေပေး  
 ပဋိနှစ်ဖော်၊ ရလျှင်သော်၏။  
 ထွေ မှာတမှာ၊ သောရှုပိတ္တနှင့်  
 ဝမှုသတ္တ၊ တက္ကမတ္တ၊ နှစ်ဆင့်မြှုပ်။  
 သလည်းရှစ်ကို။ နှစ်ဆင့်သို့၏။  
 နောကိုနှစ်ဆင့်၊ ဟနှင့်သင့်လိမ့်။  
 အကားကြက်ခြေ၊ လိုလျှင်ပေးလုံး။  
 သင်အမျိုး၊ ဝွှေးနှီး၊ လေးလုံး၊ သည်။  
 ရေးမိုးနှင့်ကဏ္ဍာပ်တည်း။

The greater part of this is the same as the first. Slight alterations have been made to work the letters omitted by the first into the metre. I have written it for clearness with a line to each figure or combination of figures.

The key is :—

କାନ୍ଦିଲା ପାତା ପାତା ପାତା ପାତା ପାତା ପାତା ପାତା ପାତା ପାତା ପାତା

The gives an alternative အောင်: to that of the ရွှေဘာသာနိုဘာ. It is hardly necessary to explain that:—

အစ်	or	အစ်ကို	= 1
တိန်း	= 3		
ယော	= 4		
ပဉာဏ်	= 5		
သော	= 6		
သထ္ထ	= 7		
အန္တာ	= 8		
နော	= 9		

The quaintness of the *āśā* may be considered an excuse for giving them in full.

The materials for this paper were communicated to me by a Rahan now living in the Yamethin District.

C. H. DAVIES, I.C.S.

**ALPHABETUM BARMANORUM**  
**CARPANI-MELCHIOR.**

Alphabetum Barmanorum seu Bomanum Regni Avœ finitarumqua regionum,  
Romæ MDCCCLXXVI. Typis Sacré Congreg, de Propaganda Fide. Præsidium  
adprobatione. (19cm. X13cm.)

Writes Bishop Bigandet (Outline of History of the Catholic Burmese Mission) pp. 19, 21 :—

"Father Melchior Carpani came to Burma in 1767. Whilst at Rangoon, Bishop Percoto came to the resolution of sending Father Carpani to Rome for the purpose of giving to the sacred congregation an accurate statement of the Mission, and also to obtain its approbation of the various Burmese works he had composed, and if possible, to have them printed at the Propaganda Press. After a stay of seven years in Rangoon, Father Carpani took his departure in the year 1774."

Now as to the Burmese alphabet. In the Preface written by Johannes Christoporus Amadutius, p. VII, we read :—

"On his return, last year, from the Pegu Mission, Melchior Carpani, of the

diocese of Lodi and a member of the clerics regular of St. Paul, who are called Barnabites, to whom has been entrusted the propagation of our Faith in the most extensive kingdom of Ava and the holy ministry in thirteen churches scattered throughout that same country, has happily brought unto us the signs and letters well designed of the said Burmese language. As he lived mostly in the city called Rangon, a seaport of the kingdom of Pegu, and dwelt for sometime at Ava near the king himself, it was easy for him to become proficient in the languages of the country and obtain the exact forms of its alphabet. Thanks to this, the carving, cutting and casting of this Alphabet was duly proceeded with by our own experts in the art of casting, and thus we were able to commit to the press the very first specimen letters of that language as also a summary of our Christian doctrine." Pp. XV-XVI: "We rejoice.....to be the first to make known to the literary world and to dedicate for the advancement of the Catholic Religion this foreign alphabet, of which no trace is found on the brass tablet of twenty-seven Alphabets, as revised, augmented and published in the year MDCCCLIX (1759) by Dr. Charles Morton. Neither is it to be found in that large collection of Alphabets with two hundred different versions of the Lord's Prayer expressed in as many exotic types and idioms, as published at Leipzig in the year MDCCCLVIII, (1758) by Joh. Fred. Fritz and Benjamin Schultze. No trace of it either in that other collection of the Lord's Prayers edited by the well-known Chamberlayne; nor finally in the great Encyclopedic Lexicon, where are found many of the alphabets of the exotic languages." The Alphabetum Barmanorum was published a second time at Rome, 1787. "Editio altera emendatior," writes Paulinus a S. Barth., Musei Borgiani Vellitris, Romae, 1793, p. I.

E. LUCE.

## ETYMOLOGICAL NOTES

III

## ထုတ္တာရေးနှင့်လျှပ်စီးအကြောင်း

ရအ ခေါ်လောင် ထံမိုးဟူ၍၊ အများတွင်သည်။ ကျမိုးဂန်အရ-မဟိုလာ ဆယ်ရပိုအ ဝင်-သွောင်ထံမိုးမဟိုလာဟူ၍၊ ဆင်ယင်ကျင်ဖြေရသည်။ ငင်းသောင်သည်။ သွောင် က လာသောကြောင့်။ ယင်ယိန္ဒို ရေးထံမိုးပြရန်သင့်စွဲတင်သည်။ ဦးကား-ဥက္ကာင်း ကဆံပင်တိုကို။ မရှုတ်မထွေးခေါ်သော်လည်း ဦးကား-ဥက္ကာင်း ကဆံပင်တိုကို။ ထို့ကြောင်း မရှုတ်မထွေးခေါ်သော်လည်း ဦးကား-ဥက္ကာင်း ထားခိုင်းဖြေ၍။ သံထံမိုး။ လောင်ထံမိုး။ ဟူ၍ ခေါ်တွေ့ခြင်းဖြစ်သည်။

ဖြေးထံမိုးမှာ။ 『မြတ်မြို့အောင်ရှု၍၊ ချည်နှောင်ဆက်ထားသော။ မညီမည့်တို့သည်။ ဆက်ထံမိုး။ ဖြေးထံမိုး-ဟူ၍ ခေါ်တွေ့ကြသည်။』

မြတ်ထံမိုးမှာ။ 『မြတ်ပင်အများကို။ အများကုစ်။』 ပေါင်းစည်း ချည်နှောင်ထားသည်။ ကို၍ မြတ်ထံမိုး-ဟူ၍ ခေါ်တွေ့ကြသည်။

ကျမိုးနှင့်ခားသော ကျောက်ပြောသွောင်းပျောင်းပြတုပြု၍။ အိုးခွက်ခ ထံမိုးမှာ။ သည်ထိုနှင့်ငါး။ တောင်းနှင့်ငါး။ အခြားသောဝွှေ့ထိုနှင့်။ မ လောမခံပါ။ သိုးသန့်၍ အခြားခုခုအမြဲ့အမွှေ့မျှ။ ပြောပြု၍ ထံမိုးမှာ။ ထံမိုးထံမိုးသည်။ ကျောက်ပြောသွောင်းထံမိုးမြှုံး-ထံမိုးမြှုံး-ထံမိုးမြှုံး-ထံမိုးမြှုံး။ မဖောက်ထံမိုး-ဟူ၍ ခေါ်တွေ့ကြလသည်။

အင်းထံမိုးမှာ။ 『ရေးကိုကျက်ခံသော။ ငါးသတ္တုဝါထို့ခွဲအောင်းသော။ ချောင်းစင်း၊ ကုန်းအင်း၊ ဟူ၍ ဖြို့သည်။ ထိုကုန်းအင်းထို့တွင်း၊ ခြောက်ကျောက်ခံသောအခါ။ ရေးဝင် ရေ့တွက်မယ့်။ ငါးအချို့သည်ထို့သည်။ တာကျွေးတာမြား၊ ပြို့နှင့်အောင်တွောက်မသွားနိုင် ပါးထံမိုးဖြော်၍ ထားသိသက္ကာ့ထို့ဖြောက်ပြော့၍။ ထံမိုး-ခေါ်သည်။ မြိုင်-အင်းထို့နှင့်ထွဲဖက်၍။ မြိုင်ထံမိုးအင်းထံမိုးဟူ၍ လည်းခေါ်တွေ့ကြသည်။ ငင်းထံမိုးကိုပင်။ ထူးဟူ၍၊ လည်းခေါ်တွေ့ကြသည်။ ငါးအများချင်းခို့အောင်းသောနေရာကိုပင်။ ငါးထူးပါးထံမိုးဟူ၍၊ လည်းခေါ်တွေ့ကြသည်။ ငါးနေသောတွင်းကိုထူးတွင်း ဟူ၍၊ လည်းခေါ်တွေ့ကြသည်။ ငင်းထူးနှင့် ထံမိုးသည်။ အမည်ကွဲ့သော်လည်း၊ ဌာနအ တူတူ-ဖြစ်ချေသည်။

ရုံးမြော်။ မူးမြော်။ ရုံးချောင်း။ မူးချောင်း။ ရုံးရှုံး။ ရုံးရှုံး-ခုံးသက္ကာ့ထို့။ အိုးကားရုံးနှုံးသည်။ သဘောတူဖြစ်ချော်သည်။

ဆင်ထူး၊ ဆင်ထံမိုး။ 『ဆင်တိရှုံးနှုံးကို။ မသွားမလာသို့ကြောင်းချုပ်ထားသိသက္ကာ့ထို့။ ရှေ့လက်နှင့်အက်ကို။ ချည်တွေ့ဖြော်ဖွဲ့ထားသည်ကို။ ဆင်ထူး-ခေါ်သည်။ ဆင်ကို-ထူးသတ်ထားသည်ဟု၍၊ လည်းခေါ်ပြော့ဖြော်ဖွဲ့ကြသည်။』

ငင်းဆင်ထူးသည်။ ရမထာကြမိကို။ ကြေးက္ကာ့ထို့-လိမ်ကျော်၍။ ဆင်၏လက်-J-ချောင်း ဝင်လောက်အောင်းကွင်း-ပြုလုပ်ထားသည်။ ငင်းကွင်းထံမိုး။ ဆင်-လက်-J-ချောင်းကို။ ဖျို့၍၊ ဆင်-လက်-J-ခုံးအကြားတွင်း၊ ဖြော်ကွင်းကို။ ဖြေးနှင့်ချည်တုပါ။ ထံမိုးဖွဲ့ထားသည်ကိုခြော်၍။ ဆင်-ထံမိုးဟူ၍၊ လည်းခေါ်ဆို့ခြင်း။ ထံမိုးမြှုံးခေါ်ဆို့ခြင်း။ ထံမိုးသော်အများဖြင့်။ ဆင်ထူးဟူ၍၊ ခေါ်တွေ့ကြလသည်။

ထိုရှုံးသွားဆင်ကို။ တုပ်နှောင်း။ ချည်ထားသော ဖြော်ထူးကွင်းနှင့် တူသည်ကိုခြော်၍။ အကွားကွားလည်း-၃၃-ထံမိုးတွင်း (ထ) ဆင်ထူးဟူ၍၊ ခေါ်လောင်သည်။

ချောင်း-ဆင်းများတွင်း၊ အကြောင်းအောင်းများတွင်း။ ကံးဘားအောက်ခြေတွင်း။ ထူးက္ကာ့ထို့။ ရေးတွေ့ပြုတွေးပါးများတွင်း။ ထူး-ခေါ်သည်။ ငင်းရောနှင့်ငါးထံမိုးသည် မည်သည်ကိုအော်။ မတွက်မသွားနိုင်အောင်း။ ဆင်တိရှုံးနှုံးကိုထူး-ခတ်၍၊ ထားသိသက္ကာ့ထို့။ ရှိနေသာလုပ်ကိုခြော်၍။ ထူး-ခေါ်ခြင်းဖြစ်သည်လုပ်၍၊ ပုဂ္ဂမတ်ရန်းခြော်သည်။ တာနည်း။ ရေးနှင့်ငါးများသည်။ ဖွဲ့စည်းရုံးခုံးခုံးခြော်လည်း၊ အိုးထံမိုး-ဟူ၍၊ လည်းခေါ်တွေ့ခြင်း-ရှို့လောင်သည်။

ထိဖြတ်ထံမဲ့သည်ကား၊ ကျွော်ကြေလေ၊ ဥပါဒီးမကျေထိဘိ၏ ထူးအခြေအာမြို့နာယူ  
မှတ်သားကြရန်၊ ထာဏ်ရင်ဆုံးဖြတ်ခြင်းသည်ထူးကို။ ကောက်နှစ်ဖွဲ့ထားဆုံးဖြတ်ခဲ့  
သောကြောင့်၊ ဖြတ်ထံမဲ့ဟု၍၊ ခေါ်တွင်လေသည်။

ତିର୍ଯ୍ୟକ୍ଷରଣାମ୍ବା ॥ ରେଣୁରେଣୁପାଏଇ ଅବୟନ୍ତିଗା ॥ କୋଳଙ୍କଳନ୍ଦିନ୍ଦିତି ॥ ତୋ-ତୋର୍ବନ୍ଦିନ୍ଦିତି ॥  
ତିର୍ଯ୍ୟକ୍ଷରଣାମ୍ବା ॥ କଲେଖାରୁଚିଲ୍ଲି ପ୍ରେରଣୀଶ୍ଵରାମଗାନ୍ଧିତି ॥ ରୁଦ୍ରାଶ୍ଵରାଶ୍ଵରାମଗାନ୍ଧିତି ॥  
ଅଗାନ୍ଧିତି ॥ ବାହାନ୍ଧିତି ॥ ପ୍ରେରଣୀଶ୍ଵରାମଗାନ୍ଧିତି ॥ ରୁଦ୍ରାଶ୍ଵରାଶ୍ଵରାମଗାନ୍ଧିତି ॥  
ତାତ୍ତ୍ଵିତି ॥ ପ୍ରେରଣୀଶ୍ଵରାମଗାନ୍ଧିତି ॥ ରୁଦ୍ରାଶ୍ଵରାଶ୍ଵରାମଗାନ୍ଧିତି ॥ ତାତ୍ତ୍ଵିତି ॥  
ଦୟାନ୍ଧିତି ॥ ପ୍ରେରଣୀଶ୍ଵରାମଗାନ୍ଧିତି ॥ ରୁଦ୍ରାଶ୍ଵରାଶ୍ଵରାମଗାନ୍ଧିତି ॥ ତାତ୍ତ୍ଵିତି ॥

କୁଟ୍ଟିଳିଃ ରେୟାଙ୍କିତ୍ଯାଳିଃ ॥ ଶ୍ରୀପାତିକାଲଙ୍କା ବ୍ୟକ୍ତିଷେଷଃ ପେଣ୍ଟିଲୁ-ଲୋକା ॥ ଏହାଙ୍କିମିଶ୍ରିଃ  
ତ୍ରୈକିରଣିତ୍ୟାଃ ପୁରୁଷିନ୍ଦ୍ରିଯାଃ ଗୁରୁଃ ହୁଣି ଲୋକିତ୍ୟନିତ୍ୟାଃ ॥

ဘုရားဟော ကျမ်းဂန်အခါး။ လူထိကျင့်ဆောင်။ နာခံမှတ်သား။ လိုက်နာရန်စသည်  
မားကို။လုပ်ကြင်ထံမီး-ခေါ်ထွင်ချောညီ။

ရွှေးထံမြို့မှာ ၁၈၇၅ခုနှစ်တွင် ပြည်ရိုက်ချွဲ့သနများ ဖြစ်လိုက်ခဲ့ပါ၏။

သားရှိ။ နည်းယဉ်မှတ်သား။ လိုက်နာဆောင် ရွက်ဖြေရန်။ မြတ်ဖြစ်ပြီးထားသောအရာ။  
သည်များကို။ ထံမဲ့-ဟူ၍။ ပါ့ဘွဲ့ကြောင်း။ မှတ်သားရန်ဖြေချေသည်။

သူ့သော်။ ယာရုပ်နှိပ် စာအုပ်များနှိပ်ဖြစ်ခေါ်။ အဆျားသတ်ပုံစာအုပ်များနှိပ်ဖြစ်ခေါ်  
ထံမဲ့-ကို၊ (ထံး) ဟူ၍။ ဒီကဲ့သွေးမ-အကွဲရာ။ အသတ်တမ်းခွန်နှင့်။ မပြားယိုးလေသည်။  
ငှင့်ထံမဲ့နှင့် ထံးရေးနည်းသည်။ သဘောအတူတူဖြစ်ချေသည်။

ရှေးကဗြို့မြို့ဘုရားတော်ကြီးကျောင်းများတွင်။ သင်ပုန်းကြီးစာကိုသင်ရသောအပါ။  
ထ-ဆင်ထူး။ သားတင်။ ချောင်းငင်။ မ-သတ်-ထံမဲ့။ အောက်ဖြစ်ထံမဲ့။ ရှေးကဗြို့ပေါက်  
ထံမဲ့-။ ဟူဖတ်ဆိုရပါသည်။

တာနည်း။ ထ-ဆင်ထူးသေးတင်။ ချောင်းငင်။ မ-သတ်-ထံမဲ့။ အောက်ဖြစ်-ထံမဲ့။  
ရှေးကဗြို့မြို့-၂-ထံးပေါက်။ ထံမဲ့-ဟူ၍။ လေးမတ်ဆိုကြရပါသည်။

ဆရာတိန်း။  
မြတ်သိမြို့။

## IV

## THE DERIVATION OF RĀMAÑÑA

With reference to Mr. Blagden's remarks on pages 59 and 60 of the last number of the Journal, it may perhaps be useful to remember the three divisions (ရှုံးနှုန်း) of the Mons,—the Mon-ti, Mon-tsa and Mon-ña. The last could be written either ရန် or ဏဲ့, and the country of this section of the people, Hanthawaddy, would probably be called ရှုံး၊ pronounced and written in Burmese and Burmanised Pali ရှုံး—Rāmañña. Might not ရှုံး have been a contraction of ရန်—the ရှုံး meaning 'country,' and not being a meaningless prefix?

M. O.

## “BUDDHIST CHINA”

BY

REGINALD FLEMING JOHNSTON, (JOHN MURRAY). LONDON.

At a recent celebration of the completion of his 71st year Professor T. W. Rhys Davids is alleged to have declared to a representative of the “*Morning Post*” that “in countries where the people profess Buddhism there is comparatively little crime; crimes of jealousy there may be but such a thing as high way robbery is unknown.” If this announcement from the highest living exponent of Pali Buddhism needs correction by a reference to the criminal annals of Ceylon, Siam and Burma it only shows the tendency to reaction which set in long since. It is a reaction in favour of every thing Eastern. It is typified in the present excessive lionizing of Professor Rabindranath Tagore in certain quarters. The excess makes for positive obscurity. Whether the indiscriminate abuse from the early Christian missionary of all pagan forms of worship and conduct of life was more harmful than the present-day fashion of universal eulogium of things Oriental will in the end prove a greater obstacle to the understanding of

the East by the West, cannot be prophesied ; but for students of impartial investigation into the history of religions the one method of extremes is as injurious as the other. In the present book a good deal is collected which is to the discredit of the early missionaries and there are some passages which unfortunately are not antiquated. The book will give a very fair idea of Budhism as it flourishes to-day in China but in Burma it will suffer by comparison which it must evoke with the creations of Shwe Yoe. The professed student must be prepared for some disappointment. It is a pity that the author who seems to be perfectly familiar with the Chinese Buddhist literature has not taken this opportunity to give us a more comprehensive survey of that monumental compilation, the Chinese "Tripitaka," recently brought out at Shanghai through the instrumentality of Mr. and Mrs. Hardoon. Chinse Buddhism is pre-eminently what used to be called Northern Buddhism. Mr. Johnston nowhere gives any indication that he is acquainted with the splendid St. Petersburg series of works in Sanskrit and Tibetan and Chinese bearing on the domain of his own studies. At the outset it must strike many readers as a curious book on Chinese Buddhism which from cover to cover does not once mention the greatest exponent of it, viz., Professor Sylvain Levi. The more one studies Mr. Johnston's book the more one regrets that he has lost a good opportunity of acquainting us with that vast compilation of Chinese Buddhist literature which has its counterpart in what are still fondly believed to be the Pali originals. He gives an indication here and there how wide is the divergence of opinion still entertained of certain articles of the Buddhist faith supposed to have been established beyond all criticism. Dr. Schrader, for instance, is rightly quoted as observing that "we are not entitled to say that the Buddha denied the soul but only that for him duration in time was duration of a flux and not immutability in any sense, not the stability of a substance. It was the Buddha and no one else who made the doctrine of *anatta* a moral principle and that not by denying the Absolute One but presupposing it as the true self, the only reality." Here also there is a disposition to represent as close parallels isolated notions of the widely divergent systems of Eastern and Western philosophy. The systems, as has been pointed out, must be taken as a whole. The fragments taken from the one and put alongside fragments taken from the other give a deceptive appearance of similarity and mislead the superficial reader into the belief of a common origin of both the contradictory methods of thought. We may not, however, belittle occasional identity of philosophical dicta on both sides. The modern William James, for instance, says exactly the same as the Buddha regarding the ultimate effects of all our mental operations. It would be easy for any student of the Pali *Suttas* to adduce analogues to a most striking Buddhistic thought of William James ; "We are spinning our fates ; for every smallest stroke of vice and virtue leaves its never-so-little scar.....Nothing we ever do is in strict literalness wiped out." The uncertainty of the exact original teachings of the Buddha and of the nebulous nature of traditional textual interpretation is represented by the "Dhammapada," the book par excellence of Buddhistic teachings. "Even for great benefit to another let no man imperil his own benefits, when he has realised what is for his own good let him pursue it earnestly." If this is the spirit of the *dhamma*, Mr. Johnston very rightly observes, some of the strictures on it by the later school of Mahayanists in China, Japan, Tibet and Mongolia would be fully justified. It forges a weapon for alien controversialists to whom Budddism is an egoless philosophy of egoism.

The chapter on Bodhidharma, the missionary who went from India to China, is of peculiar interest. His teaching was obviously more in conformity with the original doctrine of the Buddha, who was no great encourager of study or learning and in whose precepts we find conflicting evidence of his reliance now on individual rational choice, now on the authority of his ipsissima verba. " You will not find the Buddha in images or books" is a saying attributed to Bodhi-

dharma. His name the Chinese have transformed into Putitamo, usually abbreviated into Tamо. Tamо's teaching is partly responsible for the decay of learning in Chinese monasteries: his advice was taken too literally. Books were neglected and monkish energy centered in ecstatic meditation.

As opposed to the indulgence of the Buddhists of the Pali school, the Chinese Buddhists are strict vegetarians though they have a peculiarly disagreeable way of testifying their devotion to the sacred scriptures which they even to this day frequently write in their own blood instead of ink—blood drawn generally from the tongue.

The efficacy of vicarious prayers is believed in by the modern Buddhists of China. "The prayers and vows," says Mr. Johnston, "uttered by the pilgrims when they reach the shrine of Ti-tsang and the ceremonies performed by them or by the monks on their behalf are of various kinds but they chiefly relate to both this and the next world." A person wishing to pray for a lost parent obtains from the monks, for a consideration, a sheet of paper on which is printed a prayer to Amitabha. It is an official document appertaining to the next world. Blank spaces are left in it for the insertion of the believers' names and the required dates. This certificate of recommendation to the next world takes the following form. "We pray that you will have compassion on the soul of—age—who was born on the —date of the—year and whose soul has taken leave of its earthly life and has joined the immortals. Alas, time passes too quickly, we weep when our thoughts turn to the loved one we have lost. We implore you to take him from the place of pain and lead him to happiness. This day the—day of—we have carried out the proper ceremonies on behalf of the dead. We implore that he may be admitted to the joy of peace until such time as he may be taken again into the world of men. In the name of the Buddhas we implore you to save his soul." The trade in celestial passports is neither a monopoly of Buddhists nor the passport an article for purely Buddhistic consumption. The religious heads of certain sects of Islam in India deal in similar letters of credit to their "brother Gabriel" in heaven on behalf of persons bound for the next world.

Professional Hindu extollers of by-gone days will again find a fresh proof here that their ancient culture contained more than all that the Westerners have discovered in the present age of degeneracy. The Taoist mystics of the 3rd and 4th centuries B. C. declare that "the purified man draws his breath from the uttermost depths while ordinary people only from their throats." The value of deep and regular breathing is of course taught by many systems of mysticism besides Taoism and Tantaric Buddhism. We should have welcomed a detailed account of the conflicts between indigenous religions of China and the exotic Buddhism. It is from its fair opponents that Buddhism can be rightly judged so far as the opposition is not represented by a spirit of religious fanaticism. It seems there is a goodly literature of anti-Buddhist polemics which still lies confined to Chinese books. The fulmination of the Brahmins and Jains against the Buddhists are of exceeding value. There is a brief examination of the derivation of the name of the sacred Po-tala monastery, the headquarters of the Dalai Lama, which has its replica also in China. It seems surprising that neither to Mr. Johnston nor to the authority whom he cites has occurred the obvious derivation from the Sanskrit name of the flower with which the Chinese after their fashion of literal translation connect it.

An instance of the abysmal pessimism which permeates a certain section of Buddhist literature is furnished by a long dolorous prayer of the Jhana school.

Throughout the middle ages intercourse between China and India across the Himalayas, if interrupted, had never ceased. Just as Chinese Buddhists went to the holy land of Magadha on pilgrimage to the sacred places of Buddhism, the Hindu missionaries travelled through Tibet to China to propagate the faith. There is the recorded instance of a monk depositing in China relics of the Buddha from Benares in 1626. So thoroughly familiar with Chinese Buddhism and

yet so poorly equipped with Pali studies, Mr. Johnston wants his readers to believe without any reserve or qualification that it should not be forgotten that Buddhist monks are not compelled or expected to take perpetual vows of poverty, chastity, etc. And he contrasts Buddhism with Christianity to the disadvantage of the latter. This popular fallacy like many others connected with Buddhism dies hard. There is indeed a great conflict between the several schools of Buddhism as to whether the vows of celibacy, etc., taken by an initiated monk are only temporary, to be violated at pleasure and resumed at will, or whether they are binding on the candidate for life. We have the classical instance of the erotic and eccentric poet, Bhartrihari, whom legend makes seven times a monk and as often a layman in the lap of kingly luxury. There were, however, it must be emphasized, certain schools of very early origin which demanded the vows to be perpetual to which even the Pali tradition bears unmistakeable witness. For we have Bhuddha-ghosha's authority for it. According to his *samanta-pasadika*, the Andhaka school required the candidate to promise "yava Jivam Buddham saranam-gacchami", which is to say, the obligation was life long. Bhuddha-ghosha is careful on his own part however to insist that neither canonical prescription nor the scholia enjoin this perpetuity *n-eva Paliyam na attakathasu atthi*. It is essential to take it into account that Buddha-ghosha was an exponent of one school only and that even to him the traditional literature of that school as distinguished from the canonical texts was often suspicious, e. g., when he observes relating to a certain passage in the Great Commentary that "it appears to conflict with the Pali text" *yam cetam Mahattha-Kathayam vuttam tam Paliya viruddhamiva dissati* (By the way this passage furnishes an additional proof that Pali originally signified not the language of Buddhism but the written text of the scriptures).

The Chinese belonging as they do to the Mahayana school strictly interdict animal food, though it needs scarcely pointing out that early Buddhism was indifferent to this matter. The reproach which sometimes attaches to Chinese monasteries as to being the habitual resort of the vicious and the depraved and as the convenient sanctuary of criminals fleeing from justice is comparable to what is sometimes alleged against the Burmese monasteries. Most probably however the remarks of Mr. Johnston as applied to the Chinese monasteries hold good equally in the case of Burma, "it would be absurd to deny that there are Buddhist monks of all characters and that many have been attracted to the monkhood through their unspiritual motives. Unfortunately there are some evils which from time to time are bound to be unpleasantly conspicuous in connection with any conceivable form of coenobitic life, especially in an age of religious apathy or degeneration quite irrespective of the religious creed with which it happens to be associated. It is sometimes supposed that the life of a monk or hermit is only fit for weak-minded or incompetent idlers : whereas it is just such persons as these to whom this mode of existence is pre-eminently and dangerously unsuited". Mr. Johnston's opinion is based on personal observation and enquiry during frequent residence in many of the principal monasteries in China and he avers that though "the great religious houses of China do not all stand at a uniform level in respect of morals and religious zeal, reputation of such monasteries as those of Chiu-hua and Puto which are far from the demoralizing influences of the great towns is in most cases deservedly high". The temptation of the monastic robe to the criminal in hiding is as old at least as the *Mahavagga—annataro puriso corikam Katva palayitva bhikkhusu pabbajito hoti* (I. 43).

Indian monks were not the only ones to visit China. The Burmese also visited Pekin where there is still a library containing the Buddha's images in alabaster brought down from Mandalay. We should like to have had some confirmation of Mr. Johnston's views "that there are Chinese monks of the present day who from religious motives gladly undertake the long and expensive journey to Burma is a fact which has an especial interest when we remember

that the Buddhism of Burma and the Buddhism of China are usually regarded by Western students as hopelessly irreconcilable in respect to both of doctrine and practice". It is to be regretted that more space is not devoted to the description of the publications of the Tripitaka by Chinese emperors in 1403/24 and 1436/49, and in subsequent and preceding periods. An imperial edict bears witness to the spirit of tolerance which has made it possible for Buddhists, Taoists and Confucians to live side by side with each other in China for centuries with rare outbreaks of religious impatience which are so many exceptions which prove the rule of Chinese national characteristic of religious forbearance. "From of old time", runs an imperial edict, "the Emperors and rulers of our land have modelled their methods of government upon Confucian principles. Confucianism is not the only doctrine: there is also Buddhism. These two doctrines are like the wings of a bird: each requires co-operation of the other." The spiritual benefactions of the great Emperor Kang-hsi started with an endowment of money in 1689. Seven years later he presented each of the two great monasteries with a portion of the celebrated "Diamond Sutra" written by his own hand.

G. K. N.

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### SHWE PYE ZO WUTTU

BY PYAWDAWSETSAPE

*Buddhist Mission Press, Rangoon.*

This is a book to be spoken of in superlatives. It is superior to most novels hitherto published in coherence and interest but is especially distinguished by a marvellous accuracy of observation and vividness of expression. The characters are alive. Every scene is described as if the author had witnessed it himself. Effects of pathos or comedy or satire are attained without apparent effort simply by the skill of the born story-teller.

The scene is laid in Mandalay, Amarapura and Rangoon. The main theme is a charming story of boy and girl love. Shwe Pye Zo meets Kin Ta at the Mahamuni pagoda. They get separated in the crowd before he finds out where she lives. He at length discovers her house and visits it on the pretext of returning a string of beads which he says she left on the pagoda platform. This guile on his part alarms little Ta who has never talked with a resourceful bachelor before. Partly from fright she exchanges her string with his. He then makes himself very pleasant to the Ateindaw or guardian and Ma Gun the maid. Kin Ta says little but is talkative enough after he has gone.

ထား။—တာပြု၍ထားထားပါတီးကိုယူသွားရသလဲ။  
 ဂုဏ်။—သခင်မကေလေးကပေးလိုက်ထာကိုဘုရားယူသွားမှာပေါ့။  
 ထား။—မပေးရပါဘူးဂုဏ်းရယို။  
 ဂုဏ်။—မပေးဘဲဘယ်နှယ်ယူသွားမှုံးပမလုဘုရား  
 ထား။—သူမျိုးတိတ္ထိသွားတဲ့သွားတာ။ဘယ်နှယ်လုပ်ရအုံမှာလဲ။  
 ဂုဏ်။—သခင်မကေလေးက ချေတဲ့ပေးလိုက်ထာကိုဖွှား။  
 ထား။—မချေတဲ့လျှင်ဘယ်နှယ်လုပ်မလဲ။သူက၊ သူမျှတဲ့ပေးရမလားတဲ့။ သည်တော့မြန်မြန်  
 ချေတဲ့ပေးလိုက်ရတာပေါ့။  
 ဂုဏ်။—မချေတဲ့ဘဲနှေတိနေမယ်ဘုရား။

ထား။—နှစ်နေတော့လက်ကိုကိုင်ပြီးချုတ်မှာပေါ့။  
 ဂျိုး။—လက်ကိုကိုင်ရှင်ကော့ဘာဖြစ်မှာမျိုးလဲဘူရာ့။  
 ထား။—ဂျိုးသာလက်ကိုအကိုင်ခံပါ။  
 ဂျိုး။—ပေးတဲ့ဆုအတိုင်းမကြာချက်မြင်းပြည့်ပါခေသားဘူရာ့။  
 ထား။—တယ်လက်ကိုင်ခံချင်တကိုး။  
 ဂျိုး။—မှန်ဖွေပါ။ ဖူးကျွန်မ ဆင်းချေသားထိုမှာတော့၊ သည်ကရမ သည်က ဓားရဲတာပါ  
 ဘူရာ့၊ လသာခိုက်မြင်းဝင့်ရဆိုသလို။ သည်လိုအော်မြှုံး၊ သည်လိုမဝင့်လိုက်ဖြောင်း၊ တအင့်ဖောင့် တဆိုင်းဆိုင်းနှင့်၊ အရှိုးလိုင်းကြီး ဖြစ်ကိုကြမှာပေါ့ သခင်မ  
 ကလေးရှုံး။

The effect of Gun's advice to spin wicks while the moon shines may be imagined. From this time on, Ta Ta sadly neglects her lessons and Gun has to sing love-songs to her and repeat over and over again every word that Maung So ever said.

Kin Kin Ta and her household are suddenly compelled to flee Mandalay. Maung So has a long search for them in which he is aided by his attendant Po Du Wun and a sensible and jolly upazin, U Thawbita.

Meantime Maung So's mother has gone to Rangoon. While there she marries her daughter to a new-fledged barrister-at-law. The chapters in which he appears are masterly. We hear of the preparations made for his reception—the velvet-bordered mat for him to sit on, the chocolates which his father thinks he will like. With sure touches, the selfishness of the young man is gradually exposed. The velvet-bordered mat is pointed out to him but he fears the effect on his trousers and sits on the chair that is kept for the priest. He complains of the "heat in Burma." He declines to eat with his fingers. He walks level with his father in the street. When he has a house of his own, his durwan keeps the old man waiting at the door and the son is usually too busy to talk to him. Finally, though apparently doing well at the Bar, he deserts the old man in a monetary difficulty. All this is set down in cold narrative, with no comment or criticism. Yet the effect is a satire which the bitterest invective could not intensify. It is satire, however, without malice and all the time we not only pity the old man but are acutely uncomfortable that the son should be so lost to all decent feeling.

We have no space to trace every step in the development of the story. In the course of her wandering Kin Ta gets beaten by a jealous woman (whose fore-finger, as she abuses, goes forward and back like the driving rod of a railway engine—နီးရထားစင်ဆင်းတန်ရိုးလုပ်လက်ဖွှဲးတော်းထိုးထိုးနှင့်) Maung So is bitten by a snake and nearly dies. In the end everybody discovers everybody else in Amarapura. The mystery of Kin Ta's birth is revealed. Maung So finds buried treasure; and they seem likely to live happy ever after.

There are many passages which deserve quotation for the vigour and picturesqueness of the language. The following must serve as a specimen. Maung Maung So visits Kin Ta while her guardian is from home. Ma Gun goes to the kitchen to make tea and leaves them together. In order that she may observe them through a hole in the wall, she places a tin bucket on the kerosine oil box and climbs on top. Maung So is getting on splendidly. "I have been dying for you ever since I saw you. Just as a thirsty man must be given water and a sick man medicine, only you, Mimi, can help me in my distress. True love begets true love, they say, and if you have an eighth part of the love I have for you, believe me, Mimi, I would not change places with Thagya from heaven." So saying, he stroked Kin Ta's hair.

There was a crash of tin cans in the kitchen "Gun Gun," cries Kin Ta, "what noise is that."

"Twas a bee stung the kerosine tin," replied Gun at random. Just at this moment the old lady came into the house. Now listen to the language of tin cans ;—မောင်ချို့တဲ့မော်။ ရှစ်မီတီ မိတ်လို့ တစိတ်တောက်ပါပါလျှင်။ ယဉ်ပါတွေထားထား။ မိုလ်းသိကြားနှင့်လဲပါရိုးလားမိမိလို့၏ဆံတော်ကိုလက်နှင့်သလိုက်ရာတွင်။

နောက်တေားဆောင်မှုမျိုးမျိုးနှင့် သံပိုးသံကြား၏ ခင်ထားကဗျာများလဲဟုမေးလိုက်တေားအခါးမရွမ်းကသံပိုးကိုယှားတုပ်သွားပါတယ်လုံး၊ ဂရမ်းနှင့်ပြန်၍ပြောလိုက်လေ၏။ ဤသို့ပြောလို့နေသည့်အတွင်း။ အထိန်းတော်ကြီးသည်။ ဒေါ်ပေါ်သို့တက်လာ . . . . .

We do not know quite what happened in the kitchen simply because the cans cannot quite tell us.

It is clear that the author has more than a spark of the divine fire in him. He has obviously known many men and cities. He has read much of the old literature and has always the right word at his command. He has produced a book which his countrymen may well be proud of.

J. A. S.

### THE SAYINGS OF THINGAZA SAYADAW

There have been published of late some collections of the sayings of Thingaza Sayadaw. This Sayadaw was famous for the brilliancy of his wit and the depth of his knowledge of the Scriptures. He had a good intellect and never failed in leaving a good impression of it upon his hearers either by his cleverness, his witty sayings, his readiness of resource or his puns. Perhaps the chief attribute of his famous sayings may be said to depend very largely upon his puns. This is also true of all Burmese wits and writers. These vie with each other in producing the most magnificent puns. The Burmese language itself is in many respects, a product of this punning propensity. The various innuendos, the nervous structure of sentences and the many synonyms testify to the truth of the statement. The *lubyet* in the *pwe* is another instance. Indeed, there is such a play upon words in the ordinary course of conversation that the Burman would seem to be looked upon by the foreigner as being devoid of a strict veracity of speech. His eel-wriggling habit in words would make him a greater liar than he actually is. But in justice to him, be it said that this ebullition on the surface is sprung from a deep well of pure motives. The lotus above the surface of the water may be tossed about by the wind but is not its root right at the bottom of the lake?

Owing to his wit and religious knowledge, the company of the Sayadaw was courted by the Faithful and the worlding alike. He was held in great honour by every one, from the poor man up to the king. Perhaps a short account of his life may not be out of place. He was born in 1815 and named Maung Po. The first twelve years of childhood were spent with his mother at a village north of Amarapura. At the age of thirteen he was ordained and named Aggadhamma. After acquiring the preliminary studies of a novice at Amarapura he removed to the kyaung of Thè-in Sayadaw at Ava, from whom he learned the deeper studies of metaphysics and philosophy. At the age of twenty he was given the full ordination of Upasampadā. After three years at this kyaung he visited various other monasteries with the object of acquiring proficiency in the different branches of knowledge. The outcome of his studies may be seen in his publications such as ဝေဖွေနိုင်ကျော်များ၊ ဧပြီတော်နှေ့များ၊ ရေဆိပ်နှော်များ. His learning was now established and he was honoured with a kyaung called Thingaza and the title of Aggadhammālaikārakavidhajamahādhammarājādhiraṇaguru; but he was popularly known as Thingaza. He died at the age of seventy-two near Moulmein.

There are also many admirable anecdotes, proverbs, maxims and epigrams, which must be read in the original to be fully appreciated. The ill bred Karen often comes under the lash of his wit. Here is a lesson on misdirected revenge at the Karen's expense: A Karen asks a Burman to ride his pony. The Burman finds it a good pony and refuses to stop. To revenge himself the Karen takes the Burman's boat and says with a sneer: "If you ride my pony repeatedly, I will row your boat repeatedly up and down the river." He finds, however, that the Burman's boat causes him more fatigue than his pony to the Burman.

The following anecdote testifies to a sharp intellect : A man asks the Sayadaw, which is more powerful, Brahmā or Māra ? The Sayadaw says Brahmā. Then why, the man asks, when Māra fought with the Bodhisat on the occasion of the attainment of Buddhahood did Brahmā flee, on seeing Māra's hosts? "Don't you know, man, that it is said in the Mañgala Sutta non-association with fools is a blessing ? Well, how could you expect Brahmā to be near Māra?"

Such are the few selections of these Sayings. They are not only a good specimen of Burmese wit but also an important contribution towards literature. The language of the Sayadaw is also charming and adapts itself to the variety of subjects discussed. On the whole, we may say that the wit of the Sayadaw lies not so much in his power of putting down opposed arguments by the sheer weight of his logic as in his quickness to take in the ludicrous at a glance and magnify it so that the opponent is simply laughed out. The existence of so many parables and tales further shows that it lies more in his power to adapt varying scenes to their surroundings than in his ability in drawing original sketches.

M. T.

PROCEEDINGS  
OF THE  
BURMA RESEARCH SOCIETY

An ordinary meeting of the Burma Research Society was held on Friday evening, June 26th 1914, at Rangoon College with the president of the Society, Sir Henry Hartnoll, in the chair. Mr. C. Morgan Webb read a paper on "The Linguistic Survey of Burma." The following were present: Lady Hartnoll, Mrs. Mathews, Mrs. Moorhead, Miss Reed, Lt.-Col. Pridmore, Rev. Father Luce, Rev. J. F. Smith, Messrs. Mathews, Hunter, Rutledge, Moorhead, G. F. Grant, U May Oung, Maung Thein Kin, A. E. Bellars, B. Swithinbank, G H. Luce, A. Khalak, Boedikker, Saya Thein, Maung San U, Maung Ba, Maung Ba Dun, Maung Kin Maung, and A. D. Keith (hon. secretary).

Mr. Morgan Webb prefaced his paper by pointing out that what he was going to say was not of merely academic interest but was an actual proposal now under the consideration of the Local Government. Mr. Webb then proceeded to show the need for a linguistic survey of Burma. It was true that Burma had been omitted from the linguistic survey of India. But that survey had been undertaken as much for administrative purposes, as for the advancement of scientific knowledge. Moreover at the time of its commencement the magnitude of the task made it necessary to defer to some later date all work that was not of immediate administrative importance. Very little, too, was known at that time of the languages on the frontier of Burma. Now, however, the conditions then existing had altered. Many areas not dealt with by the census operators of 1901 had been included in the census report of 1911. The formation of the new district of Putao had materially widened our knowledge, and now only the Chin areas and the Kachin and Naga tracts had escaped consideration. It could not now be said that most of the dialects were unknown. Owing to the fact that languages of the Mon Khmer, Tai, Kachin, and Kuki-Chin families were spoken in Assam, they had been dealt with but very partially in the linguistic survey of India. Major H R. Davies had written a valuable book on Yunnan dialect. Members of the Burma Research Society, the Rev. Mr. Antisdell, Rev. Mr. Cochrane, Messrs. Duroiselle, Grant Brown, Stewart, Furnivall and U May Oung, had contributed philological and phonetical notes to the Society's journal. It was now clear that the inclusion of Burma would not jeopardise the general success of the Linguistic Survey of India. In fact its exclusion would impair the value of that survey. So much for the negative side. He had shown that there were no valid reasons why Burma should not be included in the linguistic survey. He would now try to indicate how its inclusion was positively imperative. Take the case of the Hpos who, though numerically negligible, were linguistically most important. It was probable that they belonged to one of the later waves of Tibeto-Burman invasion, and that their further progress had been barred by the Shans. Again the similarities between the languages of the tribes on the east of Irrawaddy seemed to justify the conjecture that they belonged to one family. These tribes may have been stragglers from the main body in the great invasions. The clue to these problems lay in the dialects. If it was desirable to know how the Burmans came to Burma, the sooner these dialects were studied the better, for the last census showed that the number of speakers of individual dialects was on the decrease and within a comparatively short space of time they might be completely submerged or so corrupted as to defy analysis. A linguistic survey would also help us to the knowledge of conditions long before the time of the Burmese invasion. The family of languages to which Mon Khmer belonged

covered apparently an enormous area. Pater Smidt had shown similarities between the Munda language and the aborigines of Australia. The Austric family to which Pater Smidt attributed Mon Khmer and Munda spread apparently from the eastern Isles of South America to Madagascar on the west and from New Zealand in the south to the Punjab in the north. The Shan Karen group also needed investigation, the Shan languages being most widely spread throughout Indo-China. The China group, the dialects of which were so numerous that one villager could not understand another villager who lived only twenty miles away, had merely been touched upon in the linguistic survey of India because of the accident that some 1920 Kachins happened to live in Assam. Burmese itself would repay study. An investigation of its two dialects, Arakanese and Tavoyan, with its cognates such as Taungthu, was urgently required.

How was such a survey to be conducted? The proposals he was about to make were purely tentative. A survey would be conducted in three stages. A preparation of a rough list of every language and dialect would first be entered upon. Such a list could be compiled by any one, officials, traders and others. Experts in this stage were not necessary. The duplication of languages did not matter. They would be grouped according to a geographical and linguistical classification. The second step would be a collection of records of the various languages and dialects. This would require linguistic experts. Legends and other records would be collected with translations. There would also be a translation of an English passage into the vernacular with notes on grammar and syntax. For the Linguistic Survey of India the parable of the Prodigal Son had been chosen as combining brevity with a demand for the greatest number of inflections. The last stage would be the classification of the records of the languages into their groups, classes, families, sub-families. This would, in all probability, require the aid of outside experts. They had, however, a considerable number of local officials and others who had passed examinations in various dialects. He was sure that the Burma Research Society would be only too glad to assist Government in every way. Its advice would be specially valuable in the choosing of experts to carry out the survey. Mr. Webb concluded by saying that as the services of Sir George Grierson, would be available, the opportunity might be taken to secure him for the conduct of the final stage of the survey.

Mr. Webb was loudly applauded as he sat down. Sir Henry Hartnoll expressed the feeling of the meeting in thanking Mr. Webb for his interesting paper. He suggested, however, that there were no records at all of many languages which had no script.

In reply Mr. Webb said that the phonograph could be used. In this they had an advantage over the Linguistic Survey of India, because at the time of the commencement of that survey the phonograph had not been sufficiently perfected to be reliable. Another method was to adopt some standard forms of transliteration, the Hunterian form, for example.

U May Oung suggested that some member or members of the Burma Research Society should draw up a bibliography of works already written on the various languages of Burma.

Mr. Webb replied that this would be one of the first duties of the officer conducting the survey.

Mr. Rutledge considered that Mr. Webb had thoroughly proved his case. He thought that it would be a good idea to append to Mr. Webb's article when it appeared in the Society's journal a note as to when the Linguistic Survey of India started, its scope and the time taken. Mr. Webb's object was to convince as many people as possible of the necessity of a survey. Such a note would facilitate the comprehension of what exactly a linguistical survey was. As to the local experts he foresaw certain difficulties. It had been said of one officer on the frontier that he was capable of learning a language in three weeks and forgetting it in two.

Mr. Page demurred to three weeks and from personal experience substituted six months. Officers who had once studied a language could pick it up again. The difficulty would be in the fact that so many officers who passed language examinations were so quickly transferred.

Mr. Webb was optimistic. He considered that if the Burma Research Society were to assist, competent investigators would be secured.

There being no further business the meeting broke up to enjoy the usual refreshments, after according a hearty vote of thanks to Mr. Morgan Webb and to the Local Government for allowing him to read what was now an official document.

In addition to those gentlemen named by Mr. Morgan Webb as having contributed to language research in Burma we understand that Mrs. Leslie Milne, the author of "The Shan at Home" has been engaged for some time past on a book on the Palaungs and a Palaung grammar.

**LIST OF PUBLICATIONS Received since April 1914, Volume IV, Part I.**

**Bulletin of the Philippine Library,** Volume II, Nos. 9, and 11, May and July 1914.

**Indian Antiquary,** June, July and August 1914.

**Journal of the Royal Anthropological Institute of Great Britain and Ireland,** July and December 1913.

**Journal of the East India Association,** 1914 April and July 1914.

**Journal Asiatique,** Volume II, No. 3, 1913, Volume III, Nos. 1 and 2.

**Annual Report of the Archaeological Survey of India, Frontier Circle,** for 1913-14.

**South Indian Inscriptions,** Volume II, Part IV.

**Annual Reports of the Archaeological Survey of India,** for 1909-10.



## THE HISTORY OF THE RELICS OF THE EXALTED ONE (FOUND AT PESHAWUR)

In our days, the North West Frontier Province of India and the hill country beyond it is the home of restless Pathan and Afghan tribes. Its security is only assured by means of a ceaseless round of military precautions. Every exit from the mountains round Peshawur is guarded by forts. The forts are linked together by telephones; and in addition to the regular troops in cantonments there is an outer guard of levies, police and militia.

But this has not always been the condition of affairs. Most of Northern India and Afghanistan belonged in ancient times to the Kushan Empire. Part of what we now call the North West Frontier Province was then called Gandhāra. Its capital was Pushkalavati, or as Hiuen Tsang names it Po-lu-sha-Pu-lo, now identified with modern Peshawur. The other big towns of Gandhāra occupied sites very near to the biggest towns of the modern Province. They were celebrated throughout the world as centres of religion, art, literature and learning. Some important Buddhist books, whose names are still known, were written here. Gandhāra was noted throughout India and China for the magnificence of its pagodas. It was the birth place of a school of statuary which is, in a sense, still extant.

Mediaeval and modern Peshawur have sprung up near that ancient site of Po-lu-sha-Pu-lo. The old site which lies to the north and east of the present city is probably still very much the same as it always was, except that instead of pagodas, the country is thickly covered now with innumerable Mussalman tombs. The remains of that old civilization—its brick buildings, pottery, stone images, seals, gems and coins lie only a few feet down in the soil. But on the surface there are miles of tombs and mosques, whose richly coloured enamel tiles gleam here and there amidst the dark foliage of tamarix and cypress. In the heart of this wilderness of graveyards is a beautiful Mogul garden called Wazir Bagh with long watertanks and fountains. Here crowds have always collected on Fridays and feast days to worship at the shrines of many a saint, ignorant of the fact that a small desolate mound of earth, not half a mile away, had contained for centuries relics a thousand times more venerable than those of a few Mahomedan Syeds. This mound is called Shah ji Dheri, or the King's Mound, and is the site where King Kanishka buried relics of the Gautama Buddha about 2000 years ago and built over them a pagoda.

There has only been one pagoda of superlative importance in Northern India, and it was this pagoda of King Kanishka. It stood in an open plain, rising high above the smaller pagodas at its base, just as the Shwe Dagon in Rangoon towers above its satellites. It was surmounted by a spire and twenty five circlets of gilded bronze. It was adorned with bands of precious substances, and was the largest monument in India. Its circumference was nearly a quarter of a mile, and its height was variously estimated by Chinese pilgrims from four to seven hundred feet. It possessed no less than thirteen storeys, the base being of stone and the superstructure of wood (\*)

What remains of it now? Why nothing but the Law, of which it was an ornament—the Law of Transiency. Buddhist monuments are more than ever eloquent in their decay. *Anicca, Dukkha, Anatta* is the Buddhist formula. All things are subject to death, sorrow and destruction. The proudest monuments of Kings in time are broken in pieces. This is the Law from which there is no escape. If you go very soon to Shah ji Dheri, before many more rains

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\* Marshall.

have washed down the excavated earth, you will see for yourself the remains of that same pagoda. The ancient stupa has been carefully dug out. Its base is square and measures about forty yards each way. Nothing remains of all that majestic superstructure. A few stucco frescoes of Buddha figures are preserved in places, and the fragments of a few stone images. But beyond that the place is a waste, a great earthy mound formed by the rubbish of the vanished shrine, and the accumulation of twenty centuries of dust.

At what period were the relics deposited in this peaceful land of Buddhist priests, scholars, writers and sculptors? It is not yet possible to exactly state the date, though it will undoubtedly be fixed soon. Archæological knowledge is advancing so rapidly now in India, that its problems are fast being solved, and the picture of ancient days is developing before us. Like a child's puzzle of picture blocks, the work checks its own accuracy as it is fitted together bit by bit. Yet up to the present the great Kushan Emperor, Kanishka, who reigned at Pushkalavati, the capital of Gandhāra, refuses to fit comfortably into any of the various niches suggested for him. He is spoken of as 'illusive Kanishka'; and illusive he will remain until some day a newly found coin or inscription fixes him down to his exact place in history. But roughly he belongs to a period dating from B. C. 100 to A. D. 100.

At that time several important events—the most important events in all the history of India—had lately occurred. In B. C. 560 (or as some say B. C. 500), a prince called Siddhārtha was born in Kapilavastu in Nepal of the Sākyā tribe. He grew up and became the Gautama Buddha, and electrified the world with those wonderful teachings which have 'made our Asia mild.' About two centuries later India was invaded by Alexander the Great. That invasion did not end with the retirement of his armies. Greek Governors remained, who, when the Empire of Alexander fell to bits, became kings in their respective provinces. Their descendants took Greek names, and struck coins with Greek inscriptions for the next three hundred years, and until long after all connection with Greece had been severed. After the invasion, the imported art of Greece found itself all of a sudden in contact with the marvellously warm, living, sympathetic zeal of the new religion; and the two inspirations—Greek and Indian—amalgamating, found expression in a school of statuary called Greko-Buddhist, which for beauty and feeling has never been equalled in Asia. Up to this time the Buddhists had never attempted to depict their Buddha in statuary. His presence in sculpture was represented by a wheel, or an empty throne. Now, however, he began to be carved, and that wonderful classic figure was evolved whose regular brows, fine Greek nose, wavy or curly hair, sweet mouth and exquisite poise, became so suggestive of dignity and mental repose. This was the prototype of the Buddha figure. Thousands of them have been found in Gandhāra. Thousands more remain safe from Mahomedan iconoclasm beneath the soil. The supply is almost inexhaustable. And for two thousand years in India and Burma, Tibet, China, Ceylon, Mongolia and distant Japan, no appreciable departure from that first inspiration has been attempted. Buddha images the world over have remained true to the prototype of the Greko-Buddhist school of Gandhāra.

A little more than a century after this all India fell under the benevolent rule of Asoka, who consolidated it under one rule as it was never consolidated before, or since, until our own times. His enthusiasm and religious zeal gave a fresh impetus to Buddhist architecture. He himself built numerous stupas, inscribed edicts on rocks, and set up pillars all over the country. He also collected together the relics of the Buddha which after the Mahā Parinirvāna (or Great Decease) had been divided into eight parts and deposited in stupas. In the third century B. C. he redistributed them in smaller portions throughout his Empire. It was one of these portions which came into Kanishka's hands in about the 1st century A. D., and which he enshrined in a wonderful stupa, or pagoda, in Gandhāra.

These then were the events which had preceded the rise of Pushkalavati to the zenith of its glory. The atmosphere was charged with religious enthusiasm, which found expression in art and in building. With such culture and enlightenment, flourishing under strong rulers, well able to protect their dominions, there followed, as might be expected, a civilization in Gandhāra which has not been reached there again. In art they can produce nothing now to compare with the work of their ancient predecessors. In fact, it is a safe rule in judging the age of statuary in Peshawur to give it antiquity in proportion to its perfection. In morality there has been the same decay. To realise how miserably the people have fallen in their mode of living, one has only to compare a modern village—or even modern mud Peshawur city itself—with the double storied stone buildings at Takht-i-Bhai, whose walls still stand 30 feet high after 2000 years of decay.

These flourishing conditions reigned every where. At Charsadda there were other big Buddhist monuments, notably the "Eye Gift Stupa," so called because of a legend to the effect that the Buddha in a former life had given away his eyes in charity at that spot. The mound of débris at Mir Zirat Dheri has been identified with the 'Eye Gift Stupa.' There was also a great Buddhist city on the summit of a ridge of hills called Takht-i-bhai, near the present town of Mardan. At Takht-i-bhai there were monasteries with underground refectories, and shrines containing images of Kuvera and Hāriti, and the Bodhisattvas Avalokitesvara and Maitreya (the Buddha to come). Down in the plain was another city now buried in the mounds of Saribhalo. These mounds then, and these broken ruins, of which mention has only been made of a very few, were once Gandhāra, and such were the people who as predecessors of the Burmese, had charge of the Buddha relics. Who shall say that Gandhāra of old was not as beautiful and charming as modern Peshawur—and much more peaceful. Then, as now, a rich green sea of wheat covered the plain in spring, while a sheen of pink and white fruit blossoms spread over the city. It was in such surroundings, the Chinese pilgrim Hiuen Tsang tells us, \*that one day, two thousand years ago, King Kanishka while out riding came upon a white hare, which suddenly disappeared. He then saw a young shepherd boy, who was building a little stupa about three feet high.

The King said to him "What are you doing?"

The boy replied "Formerly Sakya Buddha, by his divine wisdom delivered this prophecy :—There shall be a king in this victorious land who shall erect a stupa, which shall contain a great portion of my bodily relics."

"The sacred merits" continued the shepherd boy, "of the great king (Kanishka) in former births, with his increasing fame, have made the present occasion a proper one for the fulfilment of the old prophecy. Now I am engaged for the purpose of directing you to these former predictions."

Having said this he disappeared.

The King hearing this was overjoyed. Surrounding the site of the little stupa which the boy had made, he built a stone stupa, wishing to surpass the smaller one in height to prove the power of his religious merit. But in proportion as his stupa increased, the other always exceeded it by three feet. So he went on till he reached 400 feet..... Then he succeeded in covering the other. The King overjoyed, raised on the top of his stupa twenty five circlets of gilded copper on a staff, and he placed in the middle of the stupa a peck of 'Sariras' of Tathagata (Buddha), and offered them religious offering.

Scarcely had he finished when he saw the little stupa take its place at the South-east of the great foundation, and project from its side about half way up. The King was distressed at this, and ordered the stupa to be destroyed. When they had got down to the bottom of the second storey, through which the other projected, immediately that one removed to its former place, and once more it surpassed in height the other.

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\* Buddhist Records of Western World, p. 99.

This legend is also briefly mentioned in the To-Kwo-Ki, written by the Chinese pilgrim Fa-Hian in A. D. 400. Another pilgrim to record it is Sung Yun of Tun-hwang, who was sent to India in A. D. 518, in company with the Bhikshu Hwei Sang, on an embassy from the Dowager-Empress Tai Han of the great Wei dynasty. This is how he describes the pagoda\*—: "Sixty li south west of this (i.e., the place where Buddha plucked out his eyes to give in charity) there is a *Tsioh-li feon thou* (a pagoda with a surmounting pole, identified with Shah ji Dheri.) Investigating the origin of this tower, we find that when Tathagata (Buddha) was in the world he was passing through this country with his disciples on a mission of instruction ; on which occasion, when delivering a discourse on the east side of the city he said, 'Three hundred years after my Nirvana there will be a king of this country called Ka-ni-si-ka (Kanishka). On this spot he will raise a pagoda.' Accordingly, three hundred years after that event there was a king of this country so called." Sung Yun then repeats the legend of the building already described in the words of Hiuen Tsang. Hiuen Tsang continues†—: "Outside the city (of Po-lu-sha-Pu-lo) eight or nine li (five of Hiuen Tsang's li go to a mile) to the south east there is a pipala tree about 100 feet high. To the south of the pipala tree is a stupa built by King Kanishka. This King ascended the throne four hundred years after the Nirvana, and governed the whole of Jumbudvipa."

From the time that the last of these pilgrims wrote these accounts in the seventh century, the pagoda of Kanishka, the largest monument in India, vanished completely from the face of the earth!

When Hiuen Tsang visited it in A. D. 629 (or as some say A. D. 640), the stupa had then fallen into disrepair. Buddhism was declining. According to Mr. Marshall of the Archæological Department, there is an inscription of the 10th century from which one may infer that the pagoda survived the last of the Chinese pilgrims by about 300 years. The question then, which naturally troubled archæologists was—what had become of this great building, and how had it so completely disappeared ?

It has since been pointed out that much of Peshawur City was built out of it, just in the same way that Rome rose from the ruins of the Colosseum. Besides this it may have been partly thrown down by the marauding hosts of Mahmud of Ghazni, though most probably it never survived till his day.

There has been speculation for many years about the site of Kanishka's vanished stupa. The spot, if it could be found, would be of value and interest for several reasons. Firstly, it might, and probably did, still contain the relics of the Buddha. Secondly, if the pagoda was once located, it would be of use in fixing many other places mentioned by the Chinese pilgrims who were exact geographers, giving the direction and distance of each place from the one they had visited.

Shah ji Dheri had been an object of interest to archæologists ever since the early days of General Cunningham, who first suspected the nature of the mound in the sixties. Guessing that this might be the site mentioned by Hiuen Tsang, Fa-Hian and Sung Yun, he began to excavate with a company of Sappers under Lieutenant Crompton. A shaft was run from one side into the heart of the mound. But it was dug a little too high. Lieutenant Crompton died, and his work was suspended, when his tunnel was within twenty feet of the spot where the relic casket lay. His reports were compiled by an assistant, and were to the effect that these mounds could not possibly contain Kanishka's great stupa. It was then hoped that perhaps the stupa might be found in one of the many mounds in the adjacent district of Hashtnagar (Eight Cities), and excavations from time to time were carried out at a mound called the Bala Hissa near Charsadda, and at Mir Ziarat Dheri, which has since been proved to be the site of an almost equally celebrated pagoda known as the 'Eye Gift' of the city of Shahr-i-Napursan

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\* Buddhist Records of the Western World, p. ciii.

† Buddhist Records of Western World, p. 99.

(City of Not-Asking). Relic caskets were found in these and other big mounds, with the relics intact inside them in crystal reliquaries. They are now in the Peshawur Museum. Relics placed in such large stupas are sure to have had some special interest, but nothing is now known of their history.

In the 'nineties the subject of Shah ji Dheri was seriously taken up again by M. Foucher, the distinguished French savant. Having studied the country and carefully plotted out Hiuen Tsang's line of march, he decided that modern Peshawur was indeed identical with the Po-lu-sha-Pu-lu of the pilgrim. Therefore "outside the city eight or nine li" (about a mile and a half) there should be indications of a big pagoda, and a big monastery, of which also special mention was made. Just in that place there actually were two mounds, called Shah ji Dheri.

The thread was taken up by the Archæological Department in about 1906. Dr. Spooner studied Hiuen Tsang and confirmed the arguments of M. Foucher. The distance of the mounds from the city agreed. There were two mounds, the right distance apart, corresponding with the stupa and its monastery. Lastly Dr. Spooner thought he recognised in the word *Shah ji*, a reference to some royal place—a royal *Dheri*, or mound. As a matter of fact all these theories were perfectly correct except this last; since '*ji*' is a term used of Syeds, but never of kings.

Excavations were recommenced, after a lapse of about forty years, in 1907. For months it looked as if nothing was to be found in the confused heaps of débris. Then, in 1908 little by little there emerged from the mound the stone plinth of this gigantic pagoda, which is undoubtedly the largest of its kind known to exist in India,\* and which in other respects agrees with the description of Kanishka's memorial recorded by the Chinese pilgrims. Indeed, there could now be no shadow of doubt that this was the identical building. The exact centre was fixed at the intersecting of lines joining the four corners, and a shaft, or well, was sunk into the centre of the basement, and carried down with much labour through heavy stone foundation until, at last, at a depth of 20 feet below the surface, expectations were realised by the discovery of a small stone relic chamber. It was within twenty feet of the tunnel dug by Lieutenant Crompton in the sixties. A large stone slab covered the chamber. It had subsided a little, breaking off one of the three figures on the lid of the casket below. Otherwise the casket, and its contents, were intact. If any evidence had been previously wanting to prove that this pagoda was Kanishka's, it was amply supplied now by the objects brought to light. Kanishka's 'lion seal,' still unbroken, closed the crystal reliquary within the casket. A Kanishka coin lay near it, which in itself would have been sufficient proof of the period of deposit. Thus the authenticity of the relics was established once for all. They were the ones buried by Kanishka, and these Hiuen Tsang tells us—and his accuracy has been severely tested in all his other statements—were relics of the Gautama Buddha. Dr. Marshall points out that there were several relics deposited at the redistribution by Asoka in stupas which afterwards were in Kanishka's territory, so that there would be no difficulty in his procuring a relic to add dignity to his capital city of Pushkalavati. So link by link the evidence has been drawn from obscure Chinese monastic libraries, and from barren mounds in Northern India. It is a wonderful feat if you come to consider that Buddha died five centuries B. C. The relics now entrusted to Burma, are as authentic as those of Ramases the Great, or Seti I. But whereas there have been scores of kings as great as Ramases there has been, in our kalpa, only one Buddha, the 'Light of the World.'

The relic casket was made of an alloy—chiefly of bronze. Several weeks later, when the encrustation of ages had been chemically removed, an inscription in Karoshi was found punched into the metal in dotted lines. The last shred of doubt was dispelled by the discovery of Kanishka's name. There was also found the name of a Greek who had designed the casket. The casket was like a cylinder. Upon the lid stood a group of three figures. One figure (as already men-

\* Marshall.

tioned) had been knocked off, but it lay near by. The central figure was the Buddha. Those to right and left were the Bodhisattvas Avalokitesvara and Maitreya. The cylinder was divided into two bands. On the upper one was depicted a flight of geese. Geese have a particular significance in Buddhism. They are engraved on the Bodhi seat at Gaya, and on certain of Asoka's edict pillars. It was a wounded goose which Young Prince Siddhārtha comforted ; and we have in Burma a Buddhist province called 'Hanthewaddy' after the goose. The frescoe of geese on the casket would therefore have been considered appropriate and dignified.

On the lower band was a garland, held up at intervals by Erotes. This device is borrowed from Greek art. One figure upon it represented King Kanishka. On either side of him were the Gods of the Sun and Moon, distinguished respectively by the disc and crescent. These same emblems are found on Kanishka's coins. The casket is now kept in a safe in the Peshawur Museum. On the occasion of its being taken out for inspection by myself and a friend there was a crash of thunder, and vivid lightning.

Inside the relic casket was a small crystal vase, or reliquary, which contained--and still contains--the relics. It is shaped roughly like a barrel, and is six sided. The cavity within is cloudy, and it is difficult to see the little white bits of bone inside except in one or two clear places. I had the inestimable honour of holding it in my hand one morning in the Arakan Pagoda in Mandalay. It is kept in a safe, locked by night in the inner shrine of the pagoda, which is brightly lit with electricity. By day, when the great gates are open, a sentry is mounted over the safe. The relics are in charge of 'Paya Luyis,' or Pagoda Trustees, of whom three must be present with their several keys before the relics can be removed from the safe. The crystal reliquary now lies in a gold casket, shaped like a stupa. It was laid on a cushion. An umbrella was held over it, and thus a small procession carried it into the daylight for my inspection. A small crowd of Burmans took the opportunity of doing reverence. Some idea of the stupendous value of the find flashed upon me then, as I held it. In Egypt you can still look into the face of that very Pharo before whom Moses stood. But surely, no such wonderful find has ever been made after such a lapse of time, as this relic of the Gautama Buddha. Here in Mandalay rests a portion of that very body which beheld the omens of the old man, the sick man, and the dead, which won Enlightenment, and which made the Great Renunciation.

But to return to the find spot at Peshawur. The proximity of the Gandhāra Stupa to the City, is one of the reasons why it vanished so mysteriously from the face of the Earth. For generations after the decline of Buddhism in the Peshawur vale, the bricks were carried off for building purposes. The slabs of stone protecting the city gates, and the culverts along the Junrud Road are said (though I don't know on what authority) to belong to the stupa. Stone is not quarried locally.

The stupa has now been entirely dug out. Its plinth is roughly 40 yards square. At each corner are circular bastions, upon which, no doubt, stood smaller pagodas. There were also numerous little shrines all around the broad court yard. Their basements still exist. The floor of the pagoda court is now of course some feet below the surrounding country. Some stucco frescoes remain. Also some grotesque heads with bulging eyes and humorous faces have been found there. Originally they were made of stucco ; but they seem to have been accidentally baked in some conflagration, and so are handed down to us in a particularly good state of preservation. The finer bits of statuary have been removed into the Peshawur museum. The stupa was without doubt once beautiful. The walls were solid, and built of large, well made bricks, while here and there blocks of dressed stone were embedded in the masonry. The bricks are about ten inches long, and as already mentioned, were in great demand for building purposes in the city. Eight walls radiate, like spokes of a wheel, from the centre of the stupa. The tope is filled with alternate layers of earth and stone,

and it seems probable that these radiating walls were intended to prevent the weight of the filling from bursting the outer walls. Earth is fast being washed by rain into the well, or shaft, which was dug into the top of the mound. The 'find-spot' of great value is thus being obliterated, and nothing has been done to preserve it. When I was there last, the spot where the Buddha's relics had rested for 2000 years was desecrated with a litter of empty tins.

Considerable excavations have been made into the monastery mound. Strong brick walls, rows of pillars, and a long brick drain have been cleared. Pottery, statuary, seals, heads and gems have been added to the museum. At least three levels of occupation have been found, buildings having been erected above the remains of still older ones, which themselves had been destroyed, buried and forgotten. Sites such as this, which have been re-occupied and rebuilt upon, are as a rule less rich in 'finds' than sites which have been hurriedly abandoned by reason of fire, or earthquake, and not inhabited again. The accumulation of soil is also very great over the monastery, and it will probably never be dug out.

Constant reference is made to these monasteries by the Chinese pilgrims. It was here that some learned Buddhist books were written. There was a tradition that when the monastery had been destroyed seven times by fire, the Law of the Buddha would depart from the land. Total prophecy !! There are frequent thick deposits of ash and charcoal in the soil, showing that there were several big fires. In 629 A. D. Hiuen Tsang laments the decline of Buddhism in India, and records that the stupa was in bad repair. Buddhism was nearing extinction in the land of its birth.

The Shah ji Dheri mound belongs to a Mahomedan who has not been very generously treated. The incomparable treasure dug up on his property was claimed by the Government of India who gave him ten or fifteen rupees, or some such ridiculously small sum, to console himself with. He instituted a law suit. But as the relics were treasure trove, and he had already signed a document of surrender before the digging began, he lost his case. The significance of all this is that there is bound to be difficulty later on, if the question of a monument at the 'find-spot' arises. The necessity for marking the 'find-spot' in some suitable way has twice already been pointed out to the Government.

The relics having been recovered and authenticated, the question arose as to what was to be done with them. The claim of the Buddhist province of Burma was overwhelming, and they were eventually presented to the Burmese.

The possession of an authentic relic of the Buddha has been for centuries one of the aspirations of Burma. The Burmese may, however, be forgiven if at first they suspected the authenticity of the relic now presented them. It came in an age when a genuine bone was almost past hoping for, and from a part of India least likely to produce it. Fraudulent relics of the Buddha have before now been imported with great solemnity—as for example in about A. D. 1576, when Dharmapala, King of Ceylon sent a reputed tooth of Buddha as a present to Bureng Naung, King of Pegu. The only real tooth, which had been enshrined at Kandy, had been destroyed in 1560 by Don Constantine the Portuguese Viceroy of India, although the King of Pegu is said to have then offered to ransom it for a sum equivalent to £ 41,000 sterling.\*

But the Burmese have not been slow to appreciate the strength of the evidence in favour of these relics, and their authenticity is now believed in sincerity. A deputation, headed by the Pyinmana Mintha, a son of the late King Mindon of Burma, was sent over to Calcutta to receive them from the hands of the Viceroy in 1910. The ashes had been placed by the Indian Government in a golden casket, set with jewels, and shaped like a Buddhist stupa. It was inscribed as follows :—

"The bones enclosed within this casket are believed to be the relics of Gautama Buddha deposited by the great Kushan Emperor, Kanishka, in a once

\* Phayre's "History of Burma" p. 117.

magnificent and famous stupa near the city of Peshawur. Beneath the ruins of that stupa they were found enclosed in the crystal reliquary in which they still repose, and within a casket of bronze bearing the effigy of the Emperor Kanishka. They are entrusted by His Excellency the Earl of Minto, Viceroy and Governor-General of India, to the Buddhists of the Indian Empire to be enshrined by them at the city of Mandalay in Burma. In the tenth year of the reign of His Majesty King Edward VII Emperor of India."

The relics were conveyed to Burma on the British India Steamer *Lama*, and were exposed to view for five days at the Shwe Dagon Pagoda in Rangoon where they were visited by thousands of people. Large crowds attended the procession to the railway station where they were placed in a special train for transit to Mandalay. Halts were made at Pegu, Toungoo, Yaméthin, Thazi and Kyauksè to enable crowds of people to do reverence. How strange this, after more than a thousand years of complete neglect!

A temporary home has been found for the relics in the Sanctuary of the Arakan Pagoda at Mandalay, where, as already stated, they are placed in a safe, guarded by a sentry throughout the day, when the pagoda is open. Twenty four trustees were then appointed to superintend the care of, and future disposal of, the relics. Three members were entrusted with three different keys of the safe, without anyone of which it cannot be opened. A subscription list was started to provide funds for a suitable pagoda to be erected on a spur of Mandalay Hill. Buddhist Burma has responded enthusiastically, and a truly magnificent pagoda is now nearing completion. It is called the *Dattaw*, or Pagoda of the Relics.

The Arakan Pagoda, in which the Peshawur Buddha relics have now remained for four years, is so called after the celebrated image it contains. This image of the Buddha was cast in Arakan in the reign of King Chanda-Surya, who ascended the throne of Arakan in A. D. 146. The image became so famous that miraculous powers were attributed to it for ages afterwards. It was finally carried away by the Burmese when they conquered Arakan in A. D. 1784, and the present temple was built for its reception.

The new Relic Pagoda, or *Dattaw*, is built on very much the same plan as the Arakan. There is a square central tower of seven diminishing roofs, rising one above the other. Round this central shrine are broad colonnades. The building is solidly made of brick and stone, with iron girders in the roof. Care has been taken to ensure it an essentially Burmese appearance. The spur of Mandalay Hill upon which it stands has been built round with masonry walls so as to create a large platform, from the pagoda there is a lovely view over the shrines and moats of Mandalay to Thebaw's Palace, and the Arakan Pagoda. Beyond again lies the still older capital of Amarapura, and the white pagodas of Sagaing, beyond the Irrawaddi. The walls of the inner shrine are incrusted with coloured glass in the Burmese fashion and the relics will be protected by five gates.

There has been a long controversy as to whether the relics should be buried deep down in the masonry, or exposed to view. This latter plan has been finally decided on. I think it is a pity. It would, in my opinion, have been better to protect them as securely as possible from theft, and from the dangers of wars, revolutions, invasions, fires and other catastrophes which presumably the future has in store.

It is hoped that the relics will be finally deposited in their new home next year (1915). May they throw lustre upon our Empire, and spread the knowledge of the Buddha's Law through the whole World.

## AN APPEAL.

The relics of the Gautama Buddha having been suitably provided for, there remains one more duty to perform—namely to mark in a fitting manner the 'find-spot' in the Shah ji Dheri mound near Peshawur. Nothing has yet been done to preserve a site of great importance to all Buddhists, all antiquarians, and all geographers. Worse than this. There apparently is no intention of doing anything. The attention of the authorities has already been drawn twice to the pressing need of this work of conservation. Lord Curzon, who was approached, replied sympathetically, and addressed the Government of India. Later Dr. Marshall the Head of the Archæological Department was asked if any thing could be done. His reply was to the effect that nothing could be done.

To mark the site is obviously the right thing to do. It is difficult to say what is the obstacle in the way—but one may shrewdly guess that the owner of Shah ji Dheri, who was so shabbily treated when the relics were found, is not likely to listen sweetly to reason now. Still, with more liberal treatment his feelings could no doubt be soothed, and the difficulty is not insurmountable.

In the meanwhile, six years' rain has already washed down much earth over the site, which lies at the bottom of a deep hole. Every storm helps to obliterate the spot, and it will soon be lost for ever.

It is not fair to expect the Burmese to subscribe to this distant object, when the housing of the relics alone has cost them more than a lakh of rupees. Besides there remains much else to be done to the new pagoda. Neither can the Archæological Department be expected to devote funds to setting up monuments, where they have all too little money for exploration and conservation. In India there are now no Buddhists to carry out this work of merit. It is quite clear that unless the Government generously assumes the initiative, the site will be lost. It is a small work, but eminently worthy of a great Government. The site is of greater importance than Old Fort William, or the Black Hole, and other interesting places which were saved from obliteration by Lord Curzon. The preservation of a site such as this is not costly. A stone pavement, or a pillar, with a brief inscription is all that is necessary. In this case a handsome monument could easily be made without cost, by using some of the giant Buddhas, (fourteen feet high), now lying on their backs in the Peshawur Museum. They belong to that same age as Kanishka's pagoda, and are in every way appropriate.

The site is particularly worth saving. It is closely connected with the great Kushan Emperor, Kanishka. It is the site of what was once India's greatest monument. It is associated with Hiuen Tsang, Fa Hian and Sung Yun, towards whom the modern geographer feels a warm sympathy even across this lapse of time. What have they not done for us, those simple, brave Chinese explorers? They have restored to the world at this late age, relics which, but for them, would never have reappeared out of the dust.

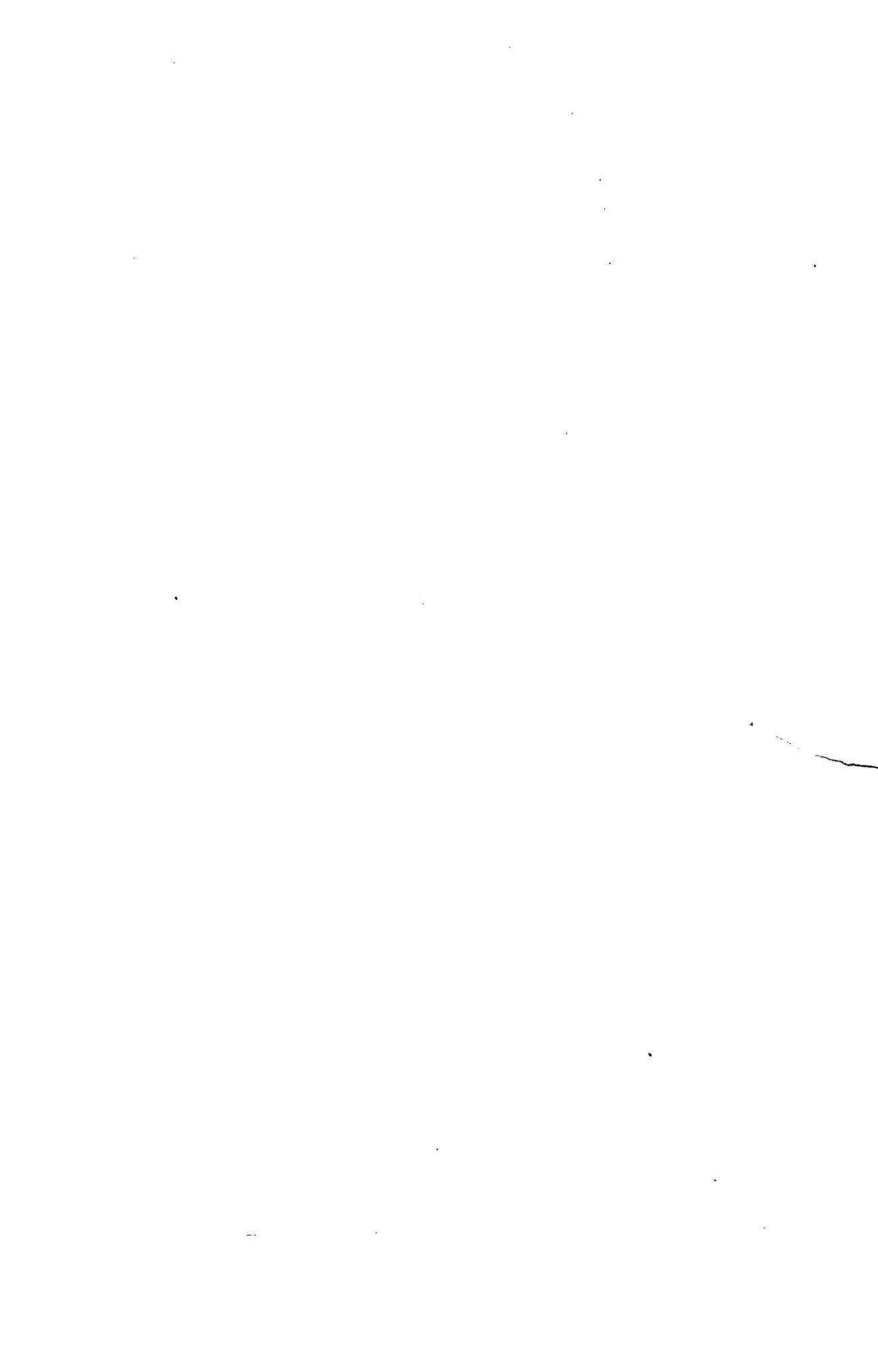
Lastly Shah ji Dheri has been the resting place for 2000 years of the ashes of the Buddha. It is therefore holy ground, and sacred to thousands of British subjects, who cannot fail to note its neglect with distress. Whatever our creed, if we know what *Truth* is, we recognise that the Lord Buddha preached, in one form, that Truth. Asoka, that great preserver of sacred sites, exhorts us to "respect the traditions of all people, which are worthy of reverence for one reason or another."\*

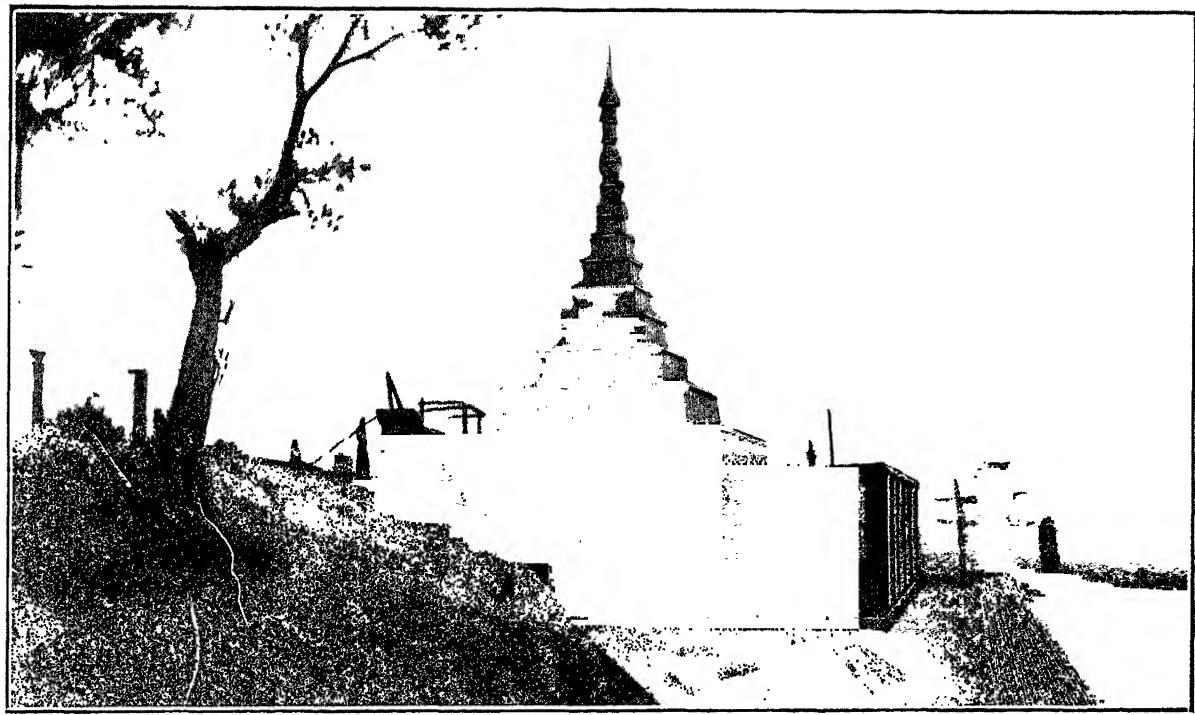
In a little span of time, what has been done in our age will have lapsed into dim history, and be subject to all the doubts and speculations of other generations. It is then clearly our duty to mark the site of the Buddha relic find, which will otherwise be lost to posterity. Here is a great opportunity to 'earn merit.'

C. M. ENRIQUEZ, CAPT.

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\* Rock Edict XII. (Shahbazghari inscription, near Mardan, N. W. and Prov.)





The Dattaw, Mandalay Hill, the pagoda destined to enshrine the Buddha relics.



## BURMESE ASTRONOMY (continued)

BY  
THOS. P. de SILVA

### VENUS' MEAN LONGITUDE

RULE.—Multiply the accumulated Savana days by 10, from which product deduct 139, the remainder divide by 2247. (18) The quotient is to be rejected as the elapsed number of revolutions. Reduce the remainder to signs, degrees and minutes by multiplying by 12, 30 and 60 successively and dividing each product by 2247. From the result deduct 6 deg. 3m. for observed correction.

For correction, add the quotient, as Savana, of the Rassa divided by 429 — and the result of the remainder  $\times \frac{10}{44}$ , as minutes of motion.

Multiply by	49605	Accumulated Savana days
	10	
Deduct adjustment	496050	
	139	brought over from beginning of epoch
Divide by 2247 )	495911	( 220 Revolutions
	494340	
	1571	
	12	Signs
	18852	( 8
	17976	
	876	As 429 years = 1 day
	30	135 , , = 0 day
	Degrees	
	26280	and as 44 , , = 10m
	( 11	135 , , = 31m
	24717	

Correction :—

(18) The multiplication of 10 and the division by 2247 = 224 days in a revolution and with the fraction converted into decimal is nearly  $224 \frac{7}{10}$  or 224.7 which is a little in excess of its quantity

The adjustment is as below :

According to Suryasiddhanta :—

$$\text{As } 1577917828 \text{ D} : (49605 - 13.9) \text{ D} : : 7022376 \text{ Time of rev : } x \\ = \frac{49591.1 \times 7022376}{1577917828} = \frac{348247350453.6}{1577917828} = 220R \ 8s \ 12d \ 12m \ .2$$

According to Samdittha without correction  
as per above circulation  $= \frac{220}{0} \frac{8}{0} \frac{11}{0} \frac{41}{30} \frac{7}{5}$   
making a difference of motion

in excess for a period of 135 years for the unaccounted fraction.

$$\therefore \text{As 135 years} = 30 \frac{1}{2} \text{ minutes of motion} \\ x \text{ no. of years} = 1d \ 37m \text{ or } 97m \text{ (for the equivalent of Venus' daily motion)} \\ = \frac{135 \times 97 \times 2}{61} = \frac{26190}{61} = 429 \text{ years.}$$

$$\text{Since, as 429 years} = 1d \ 37m \text{ or } 97m \text{ of motion} \\ x \text{ no. of years} = 10m \text{ of motion} \quad \left\{ \frac{429 \times 10}{97} = \frac{4290}{97} = 44 \text{ years.} \right.$$

	1563
	60 Minutes
	<hr/>
	93780 ( 42
	8988
	<hr/>
	3900
As per above calculation	8s 11d 42m
Add for correction	<hr/> 0 0 31 = 8s 12d 13m
Deduct for correction from observation	<hr/> 0 6 3
Venus' mean place on Sunday midnight	8 6 10
Deduct daily motion	<hr/> 0 1 36
Venus' mean place on Saturday midnight	<hr/> 8 4 34

## VENUS' TRUE LONGITUDE

Sunday at midnight mean position	<table border="0"> <tr> <td>I</td><td>Venus</td><td>8s</td><td>6d</td><td>10m</td></tr> <tr> <td>II</td><td>Sun</td><td>8</td><td>28</td><td>58</td></tr> <tr> <td>III</td><td>Apsis</td><td>2</td><td>17</td><td>52</td></tr> </table>	I	Venus	8s	6d	10m	II	Sun	8	28	58	III	Apsis	2	17	52
I	Venus	8s	6d	10m												
II	Sun	8	28	58												
III	Apsis	2	17	52												

From Venus' mean	8s 6d 10m
Take Sun's mean	<hr/> 8 28 58
	<hr/> 3 ) 11 7 12

Gola 3 and 2s 7d 12m deduct from 3 signs = 0s 22d 48m or 1368 minutes Bhuja.

As 225m : 1368m :: 1 Jya : x = 6 Jyas and 18m remainder  
 Gola 3, use Makara : 6 Jya = 566 { = 93m vivara  
 7 " = 659 }

As 225m : 18m :: 93m : x = 7m which with the equivalent of 6 Jya = 566 = 573m or at  $\frac{1}{2}$  = 4d 50m and as Gola 3 signifies subtractive,  
 From Sun 8s 28d 58m  
 Take Bhuja-phala 0 4 50 = 8s 24d 8m, 1st equation

From Apsis	2s 17d 52m
Deduct 1st equation	<hr/> 8 24 8
	<hr/> 3 ) 5 22 44

Gola 1 and 2s 22d 44m deduct from 3 signs = 0s 7d 16m or 436 minutes Bhuja,

As 225m : 436m :: 1 Jya : x = 1 Jya and 211m remainder  
 Manda : 1 Jya = 7 { = 8m vivara  
 2 " = 15 }

As 225m : 211m :: 8m : x = 7m which with the equivalent of 1 Jya = 7 = 14m or at  $\frac{1}{2}$  = 7m and as Gola 1 signifies additive,  
 To the 1st equation 8s 24d 8m  
 Add Bhuja-phala 0 0 7 = 8s 24d 15m, 2nd equation

$$\begin{array}{rcl}
 \text{From Apsis} & 2s 17d 52m \\
 \text{Deduct 2nd equation} & 8 24 15 \\
 \hline
 3 ) & 5 23 37
 \end{array}$$

Gola 1 and 2s 23d 37m deduct from 3 signs = 0s 6d 23m or  
383 minutes Bhuja,

$$\begin{array}{l}
 \text{As } 225m : 383m :: 1 \text{ Jya} : x = 1 \text{ Jya and } 158m \text{ remainder} \\
 \text{Manda : 1 Jya} = 7 \\
 2 \text{ " } = 15 \} = 8m \text{ vivara}
 \end{array}$$

As 225m : 158m :: 8m : x = 5m which with the equivalent of 1 Jya = 7  
= 12 and as Goda 1 signifies additive,

$$\begin{array}{rcl}
 \text{To Sun} & 8s 28d 58m \\
 \text{Add Bhuja-phala} & 0 0 12 = 8s 29d 10m, 3rd equation
 \end{array}$$

$$\begin{array}{rcl}
 \text{From Venus} & 8s 6d 10m \\
 \text{Deduct 3rd equation} & 8 29 10 \\
 \hline
 3 ) & 11 7 0
 \end{array}$$

Gola 3 and 2s 7d 0m deduct from 3 signs = 0s 23d 0m or  
1380 minutes Bhuja,

$$\begin{array}{l}
 \text{As } 225m : 1380m :: 1 \text{ Jya} : x = 6 \text{ Jyas and } 30m \text{ remainder} \\
 \text{Gola 3, use Makara : 6 Jya} = 566 \\
 7 \text{ " } = 659 \} = 93m \text{ vivara}
 \end{array}$$

As 225m : 30m :: 93m : x = 13m which with the equivalent of 6 Jya  
= 566 = 579m or 9d 39m and as Gola 3 signifies subtractive,

$$\begin{array}{rcl}
 \text{From 3rd equation} & 8s 29d 10m \\
 \text{Deduct Bhuja-phala} & 0 9 39
 \end{array}$$

Venus' true position on Sunday at midnight 8 19 31 = 4th equation

$$\text{Saturday at midnight mean position } \left\{ \begin{array}{ll} \text{I} & \text{Venus } 8s 4d 34m \\ \text{II} & \text{Sun } 8 27 59 \\ \text{III} & \text{Apsis } 2 17 52 \end{array} \right.$$

$$\begin{array}{rcl}
 \text{From Venus} & 8s 4d 34m \\
 \text{Take Sun} & 8 27 59 \\
 \hline
 3 ) & 11 6 35
 \end{array}$$

Gola 3 and 2s 6d 35m deduct from 3 signs = 0s 23d 25m or  
1405 minutes Bhuja,

$$\begin{array}{l}
 \text{As } 225m : 1405m :: 1 \text{ Jya} : x = 6 \text{ Jyas and } 55m \text{ remainder} \\
 \text{Gola 3, use Makara : 6 " } = 566 \\
 7 \text{ " } = 659 \} = 93m \text{ vivara}
 \end{array}$$

As 225m : 55m :: 93m : x = 23m which with the equivalent of  
6 Jya = 566 = 589m or at  $\frac{1}{2}$  = 4d 54m and as Gola 3 signifies subtractive,

$$\begin{array}{rcl}
 \text{From Sun} & 8s 27d 59m \\
 \text{Take} & 0 4 54 = 8s 23d 5m, 1st equation
 \end{array}$$

$$\begin{array}{rcl}
 \text{From Apsis} & 2s 17d 52m \\
 \text{Take 1st equation} & 8 23 5
 \end{array}$$

3 )    5    24    47

Gola 1 and 2s 24d 47m deduct from 3 signs = 0s 5d 13m or  
613 minutes Bhuja,

As 225m : 613m :: 1 Jya : x = 2 Jyas and 163m remainder  
Manda 2 Jya = 15 }  
3 " = 22 }

As 225m : 163m :: 7m : x = 5m which with the equivalent of 2 Jya =  
15 = 20m or at  $\frac{1}{2}$  = 10 and as Gola 1 signifies additive,

To 1st equation                8s 23d 5m  
Add Bhuja-phala              0    0    10 = 8s 23d 15m, 2nd equation

From Apsis                  2s 17d 52m  
Take 2nd equation            8    23    15

3 )    5    24    37

Gola 1 and 2s 24d 37m deduct from 3 Signs = 0s 5d 23m or  
323 minutes Bhuja.

As 225m : 323m :: 1 Jya : x = 1 Jya and 98m remainder  
Manda : 1 Jya = 7 }  
2 " = 15 }

As 225m : 98m :: 8m : x = 3m which with the equivalent of 1 Jya =  
7 = 10m and as Gola 1 signifies additive,

To Sun                        8s 27d 59m  
Add Bhuja-phala            0    0    10 = 8s 28d 9m, 3rd equation

From Venus                  8s 4d 34m  
Deduct 3rd equation        8    28    9

3 )    11    6    25

Gola 3 and 2s 6d 25m deduct from 3 Signs = 0s 23d 35m  
or 1415 minutes Bhuja.

As 225m : 1415m :: 1 Jya : x = 6 Jyas and 65m remainder

Gola 3, use Makara : 6 Jya = 566 }  
7 " = 659 } = 93m vivara

As 225m : 65m :: 93m : x = 27m which with the equivalent of 6 Jya = 566 = 593m or 9d 53m and as Gola 3, signifies subtractive,

From 3rd equation                8s 28d 9m  
Deduct Bhuja-phala            0    9    53

Venus' true position on Saturday at midnight                8    18    16, 4th equation

From Sunday at midnight Venus' true position                8s 19d 31m  
Take Saturday at midnight Venus' true position            8    18    16

Daily motion                    0    1    15  
As 24 hrs : 10 hrs : 1d 15m or 75m : x =                    31m which addeded  
to Saturday at midnight    8s 18d 16m

Venus' true place on Sunday at 10 a.m. 11th                8    18    47  
January 1874

## SATURN'S MEAN LONGITUDE.

RULE.—Add 1877 to the accumulated Savana days; the sum divided by 10766, rejecting the quotient as elapsed revolutions, reduce its remainder to signs, degrees and minutes by multiplying by 12,30 and 60 successively and dividing each product by 10766. To which result add 5 degrees and 2-ms for correction from observation.

For correction, add one Savana day for every 131 years of the Rassa and add one minute of motion for every 65 for its remainder.—

The result is the mean place of Saturn. (19)

To	49605	accumulated Savana days
Add adjustment	1877	brought over at beginning of epoch
Add for correction	1	

Divide by      10766 ) 51483 ( 4 Revolutions

43064

8419

12 Signs

101028 ( 9

96894

Correction:—  
For every 131 years = 1 day  
135 „ = 1 „

4134

30 Degrees

And for 65 „ = 1 min.  
4 „ = 0 min.

124020 ( 11

118426

5594

60 Minutes

335640 ( 31

32298

12660

As per above calculation

9s 11d 31m

Add for correction from observation

0 5 2

(19) The length of revolution taken as 10766 is too much, the correct value is 10765 days and fraction.

The excess is adjusted per preceding rule and worked out as below :—

According to Suryasiddhanta :—

As 1577917828 D : 51482 D : : 146568 Time of rev.: x

$$= \frac{51482 \times 146568}{1577917828} = \frac{7545613776}{1577917828} = 4 \text{ Rev. } 9s \text{ } 11d \text{ } 31m \text{ } 34$$

According to Samdittha without correction :—

$$\text{As } 10766 \text{ D : } 51482 \text{ D : : 1 Rev : } x = \frac{51482}{10766} = \frac{4}{0} \frac{9}{0} \frac{11}{0} \frac{29}{2.} \frac{27}{07}$$

making a difference in motion of  
in excess over a period of 135 years for fraction unaccounted :—

∴ As 135 years = 2. 07m of motion

x no. of years = 2 (which is equivalent of Saturn's daily motion)

$$= \frac{135 \times 200}{207} = \frac{27000}{207} = 131 \text{ years.}$$

Since as 131 years = 2m of motion | =  $\frac{131}{2} = 65$  years.  
x no. of years = 1 " "

Saturn's mean position Sunday at midnight	9s 16d 33m
Take daily motion	0 0 2
Saturn's mean position Saturday at midnight	9 16 31

## SATURN'S TRUE LONGITUDE.

Sunday at midnight mean position	$\left\{ \begin{array}{l} \text{I Sun} \\ \text{II Saturn} \\ \text{III Apsis} \end{array} \right. \begin{array}{l} 8s 28d 58m \\ 9 16 33 \\ 8 8 37 \end{array}$
----------------------------------	--

From Sun	8s 28d 58m
Take Saturn	9 16 33
	<hr/>
3 )	11 12 25

Gola 3 and 2s 12d 25m deduct from 3 Signs = 0s 17d 35m or 1055 minutes Bhuja

As 225m : 1055m :: 1 Jya : x = 4 Jyas and 155m remainder

$$\text{Gola 3, use Makara : 4 Jya} = 88 \quad \left. \begin{array}{l} \\ 5 \text{ } ", = 109 \end{array} \right\} = 21 \text{m vivara}$$

As 225m : 155m :: 21m : x = 14m which with the equivalent of 4 Jya = 88 = 102m or at  $\frac{1}{2} = 51$ m and as Gola 3 signifies subtractive,  
From Saturn 9s 16d 33m  
Deduct Bhuja-phala 0 0 51 = 9s 15d 42m, 1st equation.

From Apsis	8s 8d 37m
Take 1st eqation	9 15 42
	<hr/>
3 ).	10 22 55

Gola 3 and 1s 22d 55m deduct from 3 Signs = 1s 7d 5m or 2225 minutes Bhuja.

As 225m : 2225m :: 1 Jya : x = 9 Jyas and 200m remainder

$$\text{Manda : 9 Jya} = 257 \quad \left. \begin{array}{l} \\ 10 \text{ } ", = 282 \end{array} \right\} = 25 \text{m vivara}$$

As 225m : 200m :: 25m : x = 22m which with the equivalent of 9 Jya = 257 = 279m or at  $\frac{1}{2} = 2d 19m$  and as Gola 3 signifies subtractive,  
From 1st equation 9s 15d 42m  
Deduct Bhuja-phala 0 2 19 = 9s 13d 23m, 2nd equation.

From Apsis	8s 8d 37m
Take 2nd equation	9 13 23
	<hr/>
3 )	10 25 14

Gola 3 and 1s 25d 14m deduct from 3 Signs = 1s 4d 46m or 2086 minutes Bhuja.

As 225m : 2086m :: 1 Jya : x = 9 Jyas and 61m remainder

$$\text{Manda : 9 Jyas} = 257 \quad \left. \begin{array}{l} \\ 10 \text{ } ", = 282 \end{array} \right\} = 25 \text{m vivara}$$

As 225m : 61m : : 25m : x = 7m which with the equivalent of 9 Jya = 257  
= 264m or 4d 24m and as Gola 3 signifies subtractive,  
From Saturn 9s 16d 33m  
Deduct Bhuja-phala 0 4 24 = 9s 12d 9m, 3rd equation.

$$\begin{array}{rcl} \text{From Sun} & 8s 28d 58m \\ \text{Deduct 3rd equation} & 9 12 9 \\ \hline 3 ) & 11 16 49 \end{array}$$

Gola 3 and 2s 16d 49m deduct from 3 Signs = 0s 13d 11m or  
791 minutes Bhuja.

As 225m : 791m : : 1 Jya : x = 3 Jyas and 116m remainder  
Gola 3, use Makara : 3 Jya = 66 }  
4 , , = 88 } = 22m vivara.

As 225m : 116m : : 22m : x = 11m which with the equivalent of 3 Jya =  
66 = 77m or 1d 17m and as Gola 3 signifies subtractive,  
From the 3rd equation 9s 12d 9m  
Deduct Bhuja-phala 0 1 17

Saturn's true position on Sunday at midnight 9 10 52, 4th equation.

$$\text{Saturday at midnight mean position } \left\{ \begin{array}{ll} \text{I Sun} & 8s 27d 59m \\ \text{II Saturn} & 9 16 31 \\ \text{III Apsis} & 8 8 37 \end{array} \right.$$

$$\begin{array}{rcl} \text{From Sun} & 8s 27d 59m \\ \text{Take Saturn} & 9 16 31 \\ \hline 3 ) & 11 11 28 \end{array}$$

Gola 3 and 2s 11d 28m deduct from 3 Signs = 0s 18d 32m or 1112  
minutes Bhuja

As 225m : 1112m : : 1 Jya : x = 4 Jyas and 212m remainder  
Gola 3, use Makara : 4 Jya = 88 }  
5 , , = 109 } = 21m vivara

As 225m : 212m : : 21m : x = 20m which with the equivalent of 4 Jya  
= 88 = 108m or at  $\frac{1}{2}$  = 54m and as Gola 3 signifies subtractive,  
From Saturn 9s 16d 31m  
Deduct Bhuja-phala 0 0 54 = 9s 15d 37m, 1st equation.

$$\begin{array}{rcl} \text{From Apsis} & 8s 8d 37m \\ \text{Take 1st equation} & 9 15 37 \\ \hline 3 ) & 10 23 0 \end{array}$$

Gola 3 and 1s 23d 0m deduct from 3 Signs = 1s 7d 0m or 2220  
minutes Bhuja

As 225m : 2220m : : 1 Jya : x = 9 Jyas and 195m remainder  
Manda : 9 Jya = 257 }  
10 , , = 282 } = 25m vivara

As 225m : 195m : : 25m : x = 22m which with the equivalent of 9 Jya =  
 257 = 279m or at  $\frac{1}{2}$  = 2d 19m and as Gola 3 signifies subtractive,  
 From 1st equation 9s 15d 37m  
 Deduct Bhuja-phala 0 2 19 = 9s 13d 18m, 2nd equation.

$$\begin{array}{r} \text{From Apsis} & 8s 8d 37m \\ \text{Deduct 2nd equation} & 9 13 18 \\ \hline & 3 ) 10 25 19 \end{array}$$

Gola 3 and 1s 25d 19m deduct from 3 Signs = 1s 4d 41m or  
 2081 minutes Bhuja.

As 225m : 2081m : : 1 Jya : x = 9 Jyas and 56m remainder  
 Manda : 9 Jya = 257 }  
 10 " = 282 } = 25m vivara  
 As 225m : 56m : : 25m : x = 6m which with the equivalent of 9 Jya = 257  
 = 263m or 4d 23m and as Gola 3 signifies subtractive,  
 From Saturn 9s 16d 31m  
 Take Bhuja-phala 0 4 23 = 9s 12d 8m, 3rd equation.

$$\begin{array}{r} \text{From Sun} & 8s 27d 59m \\ \text{Take 3rd equation} & 9 12 8 \\ \hline & 3 ) 11 15 51 \end{array}$$

Gola 3 and 2s 15d 51m deduct from 3 Signs = 0s 14d 9m or  
 849 minutes Bhaja.

As 225m : 849m : : 1 Jya : x = 3 Jyas and 174m remainder.  
 Gola 3, use Makara : 3 Jya = 66 }  
 4 " = 88 } = 22m vivara  
 As 225m : 174m : : 22m : x = 17m which with the equivalent of 3 Jya =  
 66 = 83m or 1d 23m and as Gola 3 signifies subtractive,

$$\begin{array}{r} \text{From the 3rd equation} & 9s 12d 8m \\ \text{Take Bhuja-phala} & 0 1 23 \\ \hline & 9 10 45, 4th equation. \end{array}$$

$$\begin{array}{r} \text{Saturn's true position on Saturday at midnight} & 9s 10d 52m \\ \text{do.} & 9 10 45 \\ \hline & 0 0 7 \end{array}$$

Daily motion

As 24 hrs : 10 hrs : : 7m : x =  
 to Saturday at midnight Saturn's position 3m which added  
 9s 10d 45m

Sunday at 10 a.m. 11th Jany. 1874 do 9 10 48 do.

### RAHU MADHYA.

RULE : To accumulated Savana days add 4348; multiply the sum by 3 and divide the product by 20383. Reject the quotient as revolutions and reduce the remainder to signs, degrees and minutes by multiplying by 12, 30 and 60 successively and dividing each product by 20383. To which result add 2 degrees and 27 mins. for correction from observation.

For correction, add the quotient of the Rassa divided by 368 to the Savana days, the remainder of which divided by 120, add the quotient to the minutes of above result. The result is the mean position of Rahu (Moon's node). (20).

To	49605	accumulated Savana days
Add adjustment	4348	brought over at beginning of epoch
	53953	
Multiply by	3	
Divide by 20383 )	161859	( 7 Revolutions
	142681	
	19178	
	12	Signs

(20) The text in Samdittha is to add for the correction but my view tentatively is to subtract : as per above  $\frac{20383}{3} = 6794\frac{1}{3}$  whereas the real quantity reduced to its fraction =  $6794\frac{3}{99}$  (see Table in Notes).

∴ the adjustment here should not be for excess as in previous cases but for being less in the divisor ; and this being so, it will evidently increase the value of the quotient.

By the Suryasiddhanta figures, it is found as below :

$$\text{As } 1577917828 \text{ D} : 53953 \text{ D} : 232238 \text{ Time of revn : x} \\ = \frac{12529936814}{1577917828} = 7 \text{ Rev. } 11s \text{ } 8d \text{ } 42m$$

The result per Samdittha rule without correction = 7      11    8    43

Now to this latter amount, if instead of adding, decrease by the value of correction, one minute, it gives the same result as the former.

#### A SUMMARY OF THE ABOVE PRECEDING RULES, HOW TO CALCULATE THE MEAN POSITIONS OF THE PLANETS, IS GIVEN BELOW IN A TABULAR FORM :—

	MARS.	MERCURY.	JUPITER.	VENUS.	SATURN.	RAHU.
Add to the Savana days ..	507	..	..	..	1877	4348
Result or Savana days multiply by ..	1	100	3	10	1	3
Deduct from result ..	0	2225	366	139	0	0
Add the quotient of Rassa divided by ..	751	809	933	429	131	368
Divide the result by ..	687	8797	12997	2247	10766	20383
As minutes add the quotient of the division of the remainder of Rassa divided by ..	24	33 10	186	11 10	65	120
Add } for correction from observation.	74	..	..	..	302	147
Deduct ..	..	242	180	183	...	..

230136 ( 11		
224213		Correction :
5923		For every 368 years = 1 day.
30 Degrees		" 135 " = 0 "
177690 ( 8		And as 120 " = 1 min.
163064		135 " = $1\frac{1}{3}$ "
14626		
60 Minutes		
877560 ( 43		
81532		
62240		

The above foregoing operations of Sighra and Manda based upon the Jyas by means of additive or subtractive equation, have reference to corrections of the several inequalities in the different kinds of motion of the planets.

When in proper (direct) motion, the Sun takes 30 days to move from one sign into another, Moon 2 days and 15 naris, Mars 45 days, Mercury 18 days, Venus 28 days, Jupiter 12 months, Saturn 30 months and Rahu 19 months.

(I) When the motion of the planets beginning with Mars, from one sign into another is ahead of their usual motion and the time taken is less than as above limited, it is said to be "Singha," and (II) if the motion is backward, "Vakra." (III) And when in excess of the limit, no movement taking place from one sign into another, "Niyadum."

The first two kinds of motion are also called in some other works :—

- "Sihaja-cariya" (deed or practice of a lion) and
- "Byaggha-cariya" (deed or practice of a tiger).

The former signifying that the retrograde motion of a planet is in the manner of a lion i.e., after finding prey, he returns by the way he came and not as in the manner of the tiger, as the term signifying in the latter.

Some other works in Burmese also give five kinds of motion, viz :—

- I. Crooked motion, i. e. a forward movement into the next sign and then backward again.
- II. Very crooked motion, i. e. the movement from a sign into the next takes less time than that allotted; or the forward movement into the next sign and again backward into another, next from its original position.
- III. Very crooked and twisted motion, i. e. by having 14 nakkhats Ashvini, Bharani, Krittika, Rohini, Magha, Svati, Saravan, Dhanasiddha, Satabisha, Revati, Uttra-pragunni, Uttraprabike, Pruppaprabike and Uttra-sau, on the left, and 11 nakkhats, Migasi, Adra, Aslesha, Pruppa-pragunni, Hastha, Citra, Visakha, Anuradha, Jetha, Mula and Pruppa-sau, on the right with Punna-phusha (7th) and Pusha (8th) nakkhats in the centre.
- IV. Accelerated motion, i. e. by skipping over a sign; or by getting from its sign into the third one; or into the fourth one from the second; or into the sixth from the fourth.
- V. Very retarded motion, i. e. it takes double the time allotted to move from one sign into another.

or

- (i). Vanka-gati, forward movement from one sign into the next.
- (ii). Ativanka-gati, by having 14 nakkhats on the left instead of as usual on the right or 11 nakkhats on the right instead of on the left and two nakkhats on the right instead of in the centre.
- (iii). Kutila-gati, backward movement from one sign into the next.
- (iv). Sigha-gati, accelerated movement by taking less time than usual.
- (v). Manda-gati, remaining in one sign longer than its usual time

Kutila-gati and Sigha-gati are respectively also called Byaggha-cariya and Sihaja-cariya.

As per above calculation	11s 8d 43m
Add for correction from observation	0 2 27
Deduct as per above correction	0 0 1
Rahu's mean (Node) on Sunday midnight	11 11 9
From	12s
Take above calculation	11s 11d 9m = 0s 18d 51m Rahu's true position on Sunday at mid-night.
Daily motion 3' (As 24 hrs : 14 hrs. :: 3') = 0 0 2 deduct excess.	
Rahu's true position on Sunday at 10 a.m.	0 18 49
For Kethu's add 6 Signs do.	= 6s 18d 49m

The Suryasiddhanta gives eight kinds of motion :-

- |  |   |             |
|--|---|-------------|
| " (I). Vakra (decreasing retrograde motion)  | } | Retrograde. |
| (II). Ativakra (increasing retrograde motion)  |   |             |
| (III). Vikala (Stationary)   |   | Direct.     |
| (IV). Manda (increasing direct motion less than the mean motion)                       |   | "           |
| (V). Mandatara (decreasing direct motion less than the mean motion)                    |   | "           |
| (VI). Sama (mean motion)   |   | "           |
| (VII). Sighratara or Atisighra (increasing direct motion greater than the mean motion) |   | "           |
| (VIII). Sighra (decreasing direct motion greater than the mean motion)                 |   | " "         |

The Suryasiddhanta further gives the limit when the planets begin to retrograde and leave their retrogression :—

" Mars, Mercury, Jupiter, Venus and Saturn get the retrograde motion about the same time when the degrees of their Kendras (distance of a planet from either of its two apses of motion) as found in the 4th operation, are equal to 164, 144, 130, 163 and 115 respectively ; and when also they equal to the remainders 196, 216, 230, 197 and 245 as found by subtracting the said numbers from 360 degrees, the planets leave their retrogression, or when

= 7 signs for Mars and Venus,  
= 8 " " Mercury and Jupiter  
and = 9 " " Saturn "

Moon, Mercury, Venus, Sun, Mars, Jupiter and Saturn stand in comparison to each other in this serial order as to their elevation from depression (from lowest to highest).

When any of the planets is greater than that of the Sun in signs and degrees, it indicates that that planet is visibly rising in the west ; and if less than that of the Sun, in the East. But to be visible the difference in longitude must be above the limit of the degrees mentioned below.

Between the Sun and Mars and other planets, take the lesser from the greater ; if deducted from Mars and other planets the degrees are West and if deducted from the Sun, East.

The difference in degrees :

East or West is 17 degrees for Mars, (within of Sun)

"	11	"	Jupiter	do
"	15	"	Saturn	do
East (retrograde)	12	"	Mercury	do
West	14	"	do	do
East	do	8	"	Venus
West	10	"	do	do

The planets Mars etc. having been overpowered within these limits of degrees by the brilliancy of the Sun are not visible (set or disappeared).



## NAKKHAT. (21)

To find the number of asterisms, at the given time, the Moon (or any of the other planets) has traversed :

*RULE : Reduce the required Planet's true longitude to minutes and divide by 800 ; the quotient is the number of asterisms traversed, and the remainder (the part traversed of the asterism in which the planet is) multiplied by 9, the product divided by 120, the quotient is ghati and its remainder divided by 2, the quotient is anughati.*

Example :—True longitude of the Moon at 10 a.m. on Sunday, 9th decrease of Pyatho 1235 B.E. is 6 Signs 3d 7m = 10,987 minutes

Divide by	800 )	10987	( 13 nakkhats elapsed
		10400	—————
Remainder		587	
Multiply by		9	—————
Divide by	120 )	5283	( 44 ghatis
		5280	—————
Divide remainder by 2)		3	—————
		1½	anughatis

The Moon is ∴ in the asterism Chitra i.e., 13 nakkhats 44 ghatis and 1½ anughatis and will be found, expressed in some Hindu Panchangams or Patras, Chitra in 3rd pad of 14 ghatis.

(21) Besides the division of the Ecliptic into 12 equal parts of 30 amsas (degrees) each, corresponding to the Signs of the Zodiac, it is also uniformly constellated into  $\frac{2}{12}$  nakkhats or asterisms ; therefore each rasi or sign = 2 nakkhats and one pad ; (4 pads = one nakhat i.e. 13d 20m or 800 minutes).

Though this mode of measurement is as quite applicable to the other planets, as some of the Hindus Almanacks (Panchangams or Patras) express the true longitudes of the Sun and the other remaining planets by nakkhats, it is more appropriately so for the Moon by being brought into special connection with its revolution in traversing 27 nakkhats and making a complete round of the Ecliptic in a Lunar month (Chandramasa) and hence the term "Lunar Mansions" and the expression in Burmese "Nay-si-nawin and San-si-neckat" (နေ့စီသိမ်းနှင့်ရွှေနီးနှင့်ကုန်) i. e. Sun riding or mounted on the nine divisions and Moon riding or mounted on nakkhats.

The first is the system of dividing the rasi or sign into nine equal parts i. e. each navim consists of 3d 20m or  $\frac{1}{4}$  of a neckat or one pad : consequently the whole Zodiac constitutes of 108 navims or pads.

The rasis and nakkhats are both reckoned from the same point of the Zero of longitude of Mesha i. e. the initial point of Mesha is first point of Ashvini.

The above rule of the multiplication by  $\frac{9}{800}$  to remainder obtained of the division by 800, is the reduction to ghatis of  $\frac{60}{800}$  which is =  $\frac{3}{40}$ , but instead of which it is taken 3 times the numerator and denominator ( $\frac{9}{120}$ ) and the division of the remainder therefrom by 2, is that which is reduced to anu-ghatis  $\frac{60}{120} = \frac{1}{2}$ . This looks a queer and conventional method of Burmese calculation but at the same time such seems to suit the purpose of the "Ko-kyoung-bedin sayas" (Astronomical calculators by 9 times) who are almost infallible in their multiplication of 9 times.

Appended is a list of the nakkhats with their measurement in the division of the Zodiac, with the Taras etc. and those of the Suryasiddhanta.

Yog Taras.		No.	Asterisms.	No. of Stars.	Figures.	Pads.
I Kaka, Crow (12)	..	1	Ashvini	6	Horseshead	4
		2	Bharani	3	Hen	4
		3	Krittika	7	Razor	1
II Hamsa, Brahmani Goose (9)	..	4	Rohini	10	Car	4
		5	Migasi	3	Deerhead	2
		6	Adra	1	Coral Bead	4
III Kakataka, Crab (14)	..	7	Punna-pushu	5	House	3
		8	Pusha	10	Arrow	4
		9	Aslesha	4	Serpent	4
IV Tula, Balance (4)	..	10	Magha	4	House	4
		11	Pruppa-phalaguni	4	Cot	4
		12	Uutra do	4	Cot	1
V Culasa, Hairpin (5)	..	13	Hashta	5	Hand	4
		14	Citra	1	Pearl	2
		15	Svati	2	Sapphire	4
VI Kevuddha, Fisherman (8)	..	16	Visakha	14	Flowery Bed	3
		17	Anuradha	15	Palm tree	1
		18	Jyetha	5	Ear ornament	4
VII Hatthi, Elephant (9)	..	19	Mula	4	Crouching Lion	4
		20	Pruppa-San	4	Crouching Lion	4
		21	Uutra-San	4	Crouching Lion	1
VIII Assa, Horse (13)	..	22	Sravanna	3	Arrow	4
		23	Dhanasiddha	4	Drum	2
		24	Satta-Bhisha	6	Flower	4
IX Bakam, Crane ; Heron (8)	..	25	Pruppa-parabhike	6	Legs of cot	3
		26	Uutra do	4	Legs of cot	1
		27	Revati	9	Fish	4

\* According to

Nakkhats	..	1	2	3	4	5	6	7	8	9	10	11
Degrees	.	8	18	34	46	60	65	92	106	118	129	145
Antara degrees	..	18	10	16	12	14	5	27	14	12	11	16
Difference in naris	..	3	1	2	2	2	0	4	2	2	1	2
Bijanas	..	0	40	40	0	20	50	30	20	0	50	40

Rule :—The Antara degrees divided by six the quotient is nari and remainder

Rasis.	Space in the Ecliptic	To pace of antecedent asterism add ten times of.	Suryasiddhanta apparent *		Longitude.	Latitude.	
Mesha	13°	20'	48' 8° '	8° 0'	10° 0' N	Alpha Arietis.	
	26	40	40 6 40	20 0	12 0 N	Musca.	
	30		65 10 50	37 30	5 0 N	Pi Tauri, Pleiades.	
	40						
Presha	53	20	57 9 30	49 30	5 0 N	Alpha Tauri, Aldebaran.	
	60		58 9 40	63	10 0 S	Lambda Orionis.	
	66	40					
Medium	80		4 0 40	67 20	9 0 S	Alpha Orionis.	
	90		78 13 0	93 0	6 0 N	Beta Geminorum.	
	93	20					
Karakat	106	40	76 12 40	106 0	0 0 N	Delta Cancri.	
	120		14 2 20	109 0	7 0 S	Alpha 1 and 2 Cancri.	
	133	20	54 9 0	129 0	0 0 N	Alpha Leonis, Regulus.	
Sinh	146	40	64 10 40	144 0	12 0 N	Delta Leonis.	
	150		50 8 20	155 0	13 0 N	Beta Leonis.	
	160						
Kan	173	20	60 10	170 0	11 0 S	Gamma or Delta Corvi.	
	180		40 6 40	180 0	2 0 S	Alpha Virginis, Spica.	
	186	40					
Tu	200		74 12 20	199 0	37 0 N	Alpha Bootis, Arcturus.	
	210		78 13	213 0	1 30 S	Alpha or Chi Libra.	
	213	20					
Briccha	226	40	64 10 40	224 0	3 0 S	Delta Scorpionis.	
	240		14 2 20	229 0	4 0 S	Alpha Scorpionis, Antares.	
Dhanu	253	20	6 1 0	241 0	9 0 S	Nu Scorpionis.	
	266	40	4 0 40	254 0	5 30 S	Delta Sagittarii.	
	270		40 6 40	260 0	5 0 S	Tau Sagittarii.	
Makara	280						
	293	20	80 13 20	280 0	30 0 S	Alpha Aquilae.	
	300		60 10	290 0	36 0 S	Alpha Delphini.	
Kum	306	40					
	320		80 13 20	320 0	0 30 S	Lambda Aquarii.	
	330		36 6 0	326 0	24 0 N	Alpha Pegasi.	
Mim	333	20					
	346	40	22 3 40	337 0	26 0 N	Alpha Audromedo.	
	360		79 13 10	359 50	0 0 N	Zeta Piscium.	

Samditha:—

12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
154	164	179	192	213	224	229	242	257	262	275	287	313	323	339	350
9	10	15	13	21	11	5	13	15	5	13	12	26	10	16	11
1	1	2	2	3	1	0	2	2	0	2	2	4	1	2	1
30	40	30	10	30	50	50	10	30	50	10	0	20	40	40	50

of which multiplied by ten is bijanas which are difference in time.

## YOGA (22).

To find the Yoga at the given time :—

**RULE :** To the true position of Sun, add that of the Moon's, the sum reduced to minutes, divided by 800, the quotient is Yoga, and its remainder multiplied by 60, divided by 800, the quotient is ghati elapsed.

Example :—

To Sun's position	8s 28d 48m
Add Moon's position	6 3 7
Sum, reducing	3 1 55
	30
	91
	60
Divided by	800 ) 5515 ( 6 yoga
	4800
	715
	60
	42900 ( 54 ghati
	4000
	2900
	3200

∴ 6th Yoga and 54 ghati elapsed which is in the 7th Yoga, i.e., Sukamma, as given in the list below :—

1. Visakūmbha, 2 Piti, 3 Āyusama, 4 Soubhagya, 5 Soubhāja, 6 Atigāya, 7 Sukamma, 8 Dhiti, 9 Sulaya, 10 Kāṇḍa, 11 Vutti, 12 Dhūva, 13 Byāghāta, 14 Hasana, 15 Varajīm, 16 Rudiya, 17 Byatipātha, 18 Viriya, 19 Parigha, 20 Siva 21 Sādaya, 22 Siddhi, 23 Subha, 24 Sukka, 25 Subrahma, 26 Inda, 27 Vardhati.

## TITHI (22a).

To find the tithi at the given time :—

**RULE :** From the true position of Moon take that of the Sun's (if not subtractable add 12) if more than 6 Signs deduct same and note it is for Lasan tithi, remainder for Lasok tithi. The remainder reduced to minutes, divided by 720, the quotient is tithi, its remainder divided by 12, the quotient is ghati.

Example :—

From Moon's position on Sunday at 10 a.m.	6s 3d 7m
Take Sun's do. do.	8 28 48
As this is more than 6s	9 4 19
Deduct for Lasan	6 0 0

(22) A yoga is the time during which the Sun and Moon together accomplish 13 degrees 20 minutes of space. There are thus 27 yogas which together make 360 degrees.—

Remainder for Lasôk		3s 4d 19m
	30	
	—	
	94	
	60	
Divide by	720 )	5659 ( 7 tithi
	5040	
Divide by	12 )	619
		51 <sub>1/2</sub> ghati

∴ On the date in question, it is in the 8th tithi of Lasôk (decrease of the Moon) or at the given time 7th tithi and 51<sub>1/2</sub> ghati have elapsed.

(22a) A month is divided into two pakkhas of 15 tithis each : the first fortnight is denominated Lasan (increase of Moon) pakkha and the other fortnight, Lasôk (decrease of Moon) pakkha.

A tithi is a luni-solar day or  $\frac{1}{15}$ th of a lunation or the average time in which the Moon increases her longitudinal distance from the Sun. As Sun on an average progresses one degree daily, Moon has really to pass 13 degrees to complete one tithi.

The tithis with the exception of the 15th and last have no special names attached to them but are ordinarily termed as first, second etc. of the lasan or lasôk pakkha tithi and the names of the two exceptional ones are punnami and amvasi tithis.

The tithis are merely nominal divisions used for calculating Moon's place and the date on which the year begins.

It so happens that Full Moon takes place in its proper asteristic position in the ecliptic later, or earlier than the 15th (or mean Full Moon) or on the 15th of the month, which occurrences are respectively termed Tinna or Alôn, Hanina or Asôk and Punna or Ani.

Months.	Full Moon.	Asterism-Nos. pd.	New Moon.		Asterism-Nos. pd.	Names of months derived from Punnami or Full Moon.
			Last point of	Last point of		
Tagu ..	" 2nd pad Citra ..	13 2	" 1st pad Bharani ..	..	1 1	Citra.
Kason ..	" 3 Visakha ..	15 3	" 2 Rohini ..	..	3 2	Visakha.
Nayon ..	" 4 Jeytha ..	18	" 3 Adra ..	..	5 3	Jeytha.
Waso ..	" 1 Uttrasan ..	20 1	" 4 Pu-ha ..	..	8	Ashar or Asanli
Wagaung ..	" 2 Danasiddha	22 2	" 1 P. Phalguni	..	10 1	Sravanna or Ovanna
Tawtalin ..	" 3 Pruppa parabha.	24 3	" 2 Hashta ..	..	12 2	Bhadra.
Thadingyut ..	" 4 Raivati ..	0 0	" 3 Svatि ..	..	14 3	Asvini. Ashuyuja
Tasaungmon ..	" 1 Krittika ..	2 1	" 4 Anuradha ..	..	17	Krittika.
Nadaw ..	" 2 Migasi ..	4 2	" 1 Pruppa-an	..	19 1	Migasi.
Pyatho ..	" 3 Punna busha.	6 3	" 2 Sravanna	..	21 2	Pusha.
Tabodwe ..	" 4 Aslesha ..	9 0	" 3 Satara bhisha.	..	23 3	Magha.
Tabaung ..	" 1 U. Phalguni	11 1	" 4 U. parabha	..	26 0	Bala-gunni.

## KARANA (23).

To find the Karana :—

**RULE :** If lasan tithis, take the tithi as it is but if lasok, add 15 to the tithi, which multiplied by two, from the product deduct one, the remainder divided by seven, if remainder is

One, it is called Pabba (moveable or cara) Karana

Two	"	Balava	"	"
Three	"	Kaulava	"	"
Four	"	Tetila	"	"
Five	"	Karaj	"	"
Six	"	Vaniccha	"	"
Seven	"	Bishati	"	"

(23) A Karana is half a tithi. As mentioned in the text the four are always fixed while the other seven are moveable and repeated each of them eight times in the month as shewn in the table below :—

Nos.	TITHIS Duration.	KARANAS Names.	Nos.	REPETITION.
1st	1st half ..	Kitughana ..	1	Fixed.
	2nd " ..	Palava ..		
2nd	1st ..	Balava ..	2	1st Moveable.
	2nd " ..	Kaulava ..		
3rd	1st ..	Tetila ..	3	do.
	2nd " ..	Karaj ..		
4th	1st ..	Vaniccha ..	4	2nd Moveable.
	2nd " ..	Bishati ..		
5th	1st ..	Palava ..	5	do.
	2nd " ..	Balava ..		
6th	1st ..	Kaulava ..	6	3rd Moveable.
	2nd " ..	Tetila ..		
7th	1st ..	Karaj ..	7	do.
	2nd " ..	Vaniccha ..		
8th	1st ..	Bishati ..	8	4th Moveable.
	2nd " ..	Palava ..		
9th	1st ..	Balava ..	9	do.
	2nd " ..	Kaulava ..		
10th	1st ..	Tetila ..	10	5th Moveable.
	2nd " ..	Karaj ..		
11th	1st ..	Vaniccha ..	11	do.
	2nd " ..	Bishati ..		
12th	1st ..	Palava ..	12	6th Moveable.
	2nd " ..	Balava ..		
13th	1st ..	Kaulava ..	13	do.
	2nd " ..	Tetila ..		
14th	1st ..	Karaj ..	14	7th Moveable.
	2nd " ..	Vaniccha ..		
15th	1st ..	Bishati ..	15	do.
	2nd " ..	Palava ..		

Besides these there are four other Karanas which are always taken as fixed Karanas :—

Lasan	1st tithi of the preceding	30 ghatis, Kitughana
Lasok	14th tithi of the succeeding	30 ghatis, Sakuni
"	15th tithi of the preceding	30 ghatis, Naga and
"	do. succeeding	30 ghatis, Catuppada

Example :—In the above the tithi found is the 8th of the lasok, therefore adding to it

which multiply by

$$\begin{array}{r} 15 \\ \hline 23 \\ 2 \\ \hline 46 \end{array}$$

deduct one from this remainder is 3, indicating Kaulava Karana.

= 45, divided by seven the

Nos.	TITHIS Duration.	KARANAS Names.	Nos.	REPETITION.
16th	2nd "	Palava ..	30	5th do.
	1st "	Balava ..	31	
	2nd "	Kaulava ..	32	
17th	1st "	Tetila ..	33	6th do.
	2nd "	Karaj ..	34	
18th	1st "	Vani cha ..	35	
	2nd "	Bishati ..	36	
19th	1st "	Palava ..	37	
	2nd "	Balava ..	38	
20th	1st "	Kaulava ..	39	
	2nd "	Tetila ..	40	
21st	1st "	Karaj ..	41	
	2nd "	Vaniccha ..	42	
22nd	1st "	Bishati ..	43	
	2nd "	Palavn ..	44	
23rd	1st "	Balava ..	45	
	2nd "	Kaulava ..	46	
24th	1st "	Tetila ..	47	
	2nd "	Karaj ..	48	
25th	1st "	Vaniccha ..	49	
	2nd "	Bishati ..	50	
26th	1st "	Palava ..	51	
	2nd "	Balava ..	52	
27th	1st "	Kaulava ..	53	
	2nd "	Tetila ..	54	
28th	1st "	Karaj ..	55	
	2nd "	Vaniccha ..	56	
29th	1st "	Bishati ..	57	
	2nd "	Sankuna ..	58	
30th	1st "	Naga ..	59	Fixed.
	2nd "	Catuppada ..	60	

## AYANAMSA (24).

To find the Ayanamsa :—

**RULE :** To the Yuga of the given date add 88 ; the sum divided by 1800, the quotient resulting therefrom divided again by 4, the remainder of which is gola.

When gola is 1 or 3, deduct the remainder of the division by 1800, from its divisor (1800) the remainder is Bhuja.

When gola is 0 or 2, take the remainder of the division by 1800, as Bhuja.

The Bhuja thus found multiplied by 9 and the product divided by 600, gives degrees and its remainder divided by 10, gives minutes called the Ayana.

When gola indicates Meshadi 0 or 1, deduct, and when Tuladi, 2 or 3 add, the ayana thus obtained, from or to the positions of the Sun and other planets. The results are the Sayana positions of the Sun and other planets.

**Example :—**

For B. E. 1235 =	4974 Kali Yuga years
Add	88
Divide by	1800 ) 5062 ( <u>2</u> 3600     4 ————
Remainder is taken	1462 as Bhuja
Multiply by	9
Divide by	600 ) 13158 ( 21° 55'.8      Gola indicates 12600     Tuladi additive.
Remainder by	10 )       558

(24) Suryasiddhanta : The circle of Asterisms librates 600 times in a great Yuga (that is to say all the Asterisms, (i) at first, move westward 27d. (ii) Then returning from that limit they reach their former places. (iii) Then from those places they move Eastward the same number of degrees, (iv) and returning thence come again to their own places).

Therefore the time of complete revolution is 600th part of 4320000 years

$$\begin{array}{l} = 7200 \text{ years of } 27d \times 4 \text{ times} \\ \text{or } \underline{\frac{7200}{4}} \text{ years} = 1800 \text{ of } 27d \end{array} = \frac{1}{54} \text{ for its annual rate}$$

The adding of 88 is because the Visuva chaya of Mesha and Tula, being the same, its adjustment is to make the two ayanas coincide at the beginning of the epoch.

The multiplication of  $\frac{1}{54}$  is the reduction obtained of  $3\frac{5}{6}\frac{1}{6}$ " of a degree of the ecliptic.

Babuji Ketkar in his "Jyotirganitam" gives the value of the Ayanamsa for the era under calculation to be 22d 5m. According to which it will be seen on page 198 whether or not the accuracy of this figure as claimed by him brings the positions of the Sun and other planets near the ones, as deduced by the Europe methods.

## CARADDHA CARASAVA BIJANAS (25).

To find the Caraddha carasava bijanas when the equinoctial shadow of a place as taken by means of a Sanku (gnomon) is given.

*RULE : Reduce the visuvachaya in liptas and palas of a given place to palas. Multiply this by ten. Set the result down in 3 places : divide in the first place by 59, 2nd by 33 and last by 28. The quotients respectively resulting from these are the caraddha carasava bijanas of the required place.*

Below is a list of a few places with the measurement of shadow taken at noon on the day of the Sun's entry into the Vernal equinox, as given on page 7 of Sara-vijjodya (25a).

		lipt	pala
Lanca and Malacca	...	0	0
Kandy, Ceylon	...	1	14
Rangoon, Lower Burma	...	3	37
Sri-Khettra, Prome	...	4	7
Dinnyawaddi, Arracan	...	4	25
Amarapoora, Mandalay	...	4	44
Bangkok, Siam (Yoedia)	...	3	9
Peking, China	...	10	10
Kwintong (Canton)	...	5	15
Majjhimadesa (Bo tree) Gaya	...	5	27
Benares (Baranasi)	...	5	45
London, England	...	15	5

Example :—The shadow taken at Rangoon 3 lipta and 37 palas reduced to palas =  $217 \times 10 =$

$$\left. \begin{array}{rcl} 1st & 2170 & \div & 59 & = & 36 \\ 2nd & 2170 & \div & 33 & = & 65 \\ 3rd & 2170 & \div & 28 & = & 77 \end{array} \right\} \text{Caraddha Carasava Bijanas}$$

*ANOTHER RULE : Set down the reduced palas in three places : in the first place multiply by 10, in 2nd by 8 and in the last by  $\frac{1}{3}$ . The results thus obtained are the carasava bijanas (ascensional difference). Take the first as it is ; add the first to the second, and the sum add to the third. The results are the caraddha carasava bijanas.*

Example :—

Amarapoora's shadow is 4 liptas 44 palas. Reduced to palas = 284 palas.

$$\begin{array}{rcl} 1st & 284 & \times & 10 & = & 2840 & \div & 60 & = & 48 & = & 48 \\ 2nd & 284 & \times & 8 & = & 2272 & \div & 60 & = & 38 & + & 48 = 86 \\ 3rd & 284 & \times & 10 & \div & 3 & = & 947 & \div & 60 & = & 16 & + & 86 = 102 \end{array}$$

(25) This is a horizontal dial with a vertical gnomon—regardless of what length it is taken it is divided into twelve equal parts called angula (finger) and each angula consists of 60 vingula.

Samdittha employs Tropical year for ascertaining the length of days and nights, i. e. by the movement of Sayana ravi that part of the day during which the Sun is above and that during which it is below, the horizon.

The initial point of Sayana ravi or the Sun's entry into the vernal equinox by tropical time is the point when the length of days and nights are of equal duration i. e. 30 naris for day and 30 naris for night. And from this point, 30 naris or half a day is increased uniformly degree by degree up to 30 naris + 36 bijanas when the Sun reaches 30 degrees in its movements. At the completion of 60 degrees the time is  $30n + 36b + 29b$ ; and at the 90th decree,  $30n + 36b + 29b + 12b$  for the latitude of Rangoon (see p.p. 193.194).

These values deducted from 30 naris will give the length of the nights.

## DINADDHA AND NISADDHA.

To find the length of day and night and the Sunrise and Sunset of a given place.

**RULE :** To the true midnight position of previous day add the fourth part of the daily motion of the Sun. Whichever the gola indicates, add to or deduct, the Ayanasma. The result is Sayana ravi. Reduce Sayana ravi in Signs and degrees, to degrees, which divided by 90 the quotient is Gola.

When gola is 0 or 2, take its remainder as Bhuja and

When gola is 1 or 3, deduct its remainder from the divisor (90) and take this remainder as Bhuja.

Divide the Bhuja by 30, the quotient is Khanda and remainder vivara. Apply this to the corresponding Khanda of caraddha carasava bijanas Jya and its remainder proportionately between the difference of gata and gamya Jayas.

If gola is Meshadi, 0 or 1, add the result (i.e., carasava) to 900.

And if Gola is Tuladi, 2 or 3, deduct the carasava from 900. The result is the Dinaddha bijanas of the day (half diurnal duration) deduct this from 1800, the remainder is Nisaddha bijanas (half nocturnal duration) of the day under calculation. Twice these results are respectively the length of day and night.

## (25a) VISUVA CHAYA.

					2 liptas 35 palas.
Mergui	..	..	..	..	
Tavoy	..	..	..	2	" 56 "
Thongwa	..	..	..	3	" 11 "
Amerst	..	..	..	3	" 20 "
Martaban, Moulmein, Myaungmya	..	..	..	3	" 27 "
Bassein, Twante, Ngaputaw, Maubin, Shwelaung	..	..	..	3	" 30 "
Thaton, Pantanaw	..	..	..	3	" 34 "
Kyunpyaw, Pegu, Rangoon	..	..	..	3	" 37 "
Henzada, Tharrawaddy	..	..	..	3	" 41 "
Shwegyin, Papun, Kyaito, Myanaung	..	..	..	3	" 47 "
Paungde, Sandoway	..	..	..	3	" 54 "
Prome, Shwedawng	..	..	..	3	" 56 "
Toungoo	..	..	..	4	" 1 "
Karenui, Thayetmyo	..	..	..	4	" 4 "
Kyaukphyu, Allanmyo	..	..	..	4	" 8 "
Pyinmana, Mobje Shan States	..	..	..	4	" 15 "
Akyab, Magwe, Minbu	..	..	..	4	" 18 "
Arracan, Myohaung	..	..	..	4	" 25 "
Yamethin, Mone, Fort Stedman, Yenangyaung	..	..	..	4	" 22 "
Maungdaw, Meiktila Taunggyi	..	..	..	4	" 29 "
Pagan, Kyaingtun	..	..	..	4	" 31 "
Kyaukse	..	..	..	4	" 36 "
Pakkoku, Myingyan	..	..	..	4	" 40 "
Ava, Sagaing, Amarapura, Mandalay	..	..	..	4	" 44 "
Mon wa, Alon	..	..	..	4	" 46 "
Chittagong, Calcutta, Shwebo, Thibaw	..	..	..	4	" 50 "
Yeu, Mingin	..	..	..	4	" 54 "
Mogok Lashio	..	..	..	5	" 2 "
Kandat, K lewa	..	..	..	5	" 9 "
Bhamo, Wuntho	..	..	..	5	" 14 "
Katha	..	..	..	5	" 18 "
Chindwin, Kachin, Budha Gaya	..	..	..	5	" 27 "

The above are the approximate measurements of shadow at noon on the day of Sun's entry into the Vernal Equinox, to within a few palas' difference of the result obtained by SAMDITTHA method. They are deduced from the Charakhanda (Ascensional difference) of an Indian work known as "Stri-pati-paddhati", an English Translation of which is printed and published by V. Subrahmanya Sastri, B. A. of Bangalore City.

Half the time of the former or latter will be respectively the time of sunset or sunrise.

Example :—For the length of day and night and sunrise and sunset of Rangoon.

Midnight true position of Sun    8s 28d 23m at 8th decrease Pyatho  
 Add  $\frac{1}{4}$  of 62m i.e., daily motion    0    0    15

Niryana Sun's position      8 28 38 at Sunrise on 9th      do.  
 Add Ayanamsha (gola Tuladi)      0 21 56

Sayana Sun's position                    9 20 34                    do.

Reduced : 9s 20d 34m  
30

Divided by 90 ) 290

Gola 3, ( and 20d 34m ) to deduct :—

From 3s or 90d Rangoon caraddha  
Take Rem' 20 34 carasava bijanas jya

$$\text{Divide by } 30 \ ) \ \underline{\quad 69 \quad 26} \quad \text{Bhuja} \qquad \text{Khanda} \quad \begin{matrix} 1st & 36 \\ & = 36 \end{matrix}$$

Khanda 2 and 9 2nd vivara 2nd 65 = 29  
3rd 77 = 12

As 30d : 9<sup>2</sup>6d :: 12 Bijanas difference : x =

$$\frac{9\frac{1}{3} \times 12}{30} = \frac{273 \times 12}{30 \times 30} = \frac{3276}{900} = 4 \text{ bijanas which added to}$$

equivalent of 2nd Khanda =  $65 + 4 = 69$  bijanas and as Gola Tuladi :

From 900 - 69 = 831 Dinaddha  $\times$  2 = 1662 bij = 27 naris 42b day  $\frac{1}{2}$   
 From 1800 - 831 = 969 Nisaddha do. = 1938 „ = 32 „ 18 night  $\frac{1}{2}$   
 = 13 naris 51 bij Sunset or 5 hrs 32m 24 sec. } English  
 = 16 „ 9 „ Sunrise or 6 „ 27 36 } English

UDAYA-BIJANAS.

To find the Udaya-bijanas of the zodiacal signs for a place when those of the zero of latitude are given, viz. —

### **According to Suryasiddhanta :—**

I	Meshā	VI	Kan	1670	VII	Tu	XII	Mim
II	Presha	V	Sinha	1795	VIII	Briccha	XI	Kum
III	Medum	IV	Karakat	1935	IX	Dhanu	X	Makara

(These are in asus ∴ if divided by 6 will give in bijanas.)

**RULE :** From or to the *udaya bijanas* of the Zero of latitude, the *caraddha carasava bijanas* of the required place, from *Mesha* to *Medium* and from *Makara* to *Mim* are subtractive and the remaining six signs, i. e. from *Karakat* to *Kan* and from *Tu* to *Dhanu*, are additive.

Example :—To find the rising periods (udaya) of Rangoon whose ascensional differences are 36, 29 and 12.

Signs.	Rising periods at zero of latitude in		Rangoon caraddha carasava	Rangoon, its rising periods in	
	Asavas.	bijanas.		bijauas.	n—bij.
I Mesha ..	1670	278—	36	242	4— 2
II Presha ..	1795	299—	29	270	4—30
III Medum ..	1935	323—	12	311	5—11
IV Karakat ..	1935	323+	12	335	5—35
V Sinh ..	1795	299+	29	328	5—28
VI Kan ..	1670	278+	36	314	5—14
VII Tu ..	1670	278+	36	314	5—14
VIII Briccha ..	1795	299+	29	328	5—28
IX Dhanu ..	1935	323+	12	335	5—35
X Makara ..	1935	323—	12	311	5—11
XI Kum ..	1795	299—	29	270	4—30
XII Mim ..	1670	278—	36	242	4— 2
	21600	3600		3600	60— 0

## LAGNA (26)

To find the Lagna at the given time :—

The text in Samdittha being rather elliptical the Notes to the Siddhantasironmani on Lagna by Bapu Devasastri, have been here inserted as the latter is more explicit than the former :

*Find first the true place of the Sun, and add to it the amount of the ayanamsa (precession of the equinox) for the longitude of the Sun. Then, from the longitude of the Sun, the sign of the ecliptic in which the Sun lies and the degrees of that sign which he has passed, and those which he has to pass, are known. The degrees of which are respectively called Bhuktamsas and Bhogvamsas. Now the time which requires to pass the Bhogvamsas is called Bhogya time, and is found thus :*

*If 30d : period of rising of sign wherein is the Sun :: Bhogvamsas : Bhogya time.*

*In the same manner, the Bhukta time can also be found through the Bhuktamsas.*

(26) That point of the ecliptic which is at any time on the Eastern horizon is called the Lagna and is expressed in s gns, degrees etc. reckoned from the first point of stellar Aries. That point which is on the Western horizon is called Attha (setting) Lagna. The point of the ecliptic on the meridian is called Madhya (middle) Lagna (culminating point of the ecliptic).

Now from the time at the end of which the Lagna is to be found and which is called the Ittha or given time, subtract the Bhogya time just found and from the remainder subtract the periods of rising of the next successive signs to that in which the Sun is as long as you can. Then at last you will find the sign, the rising period of which being greater than the remainder you will not be able to subtract, and which is consequently called the Asuddha sign and its rising period, Asuddha rising. From this it is evident that the Asuddha sign is of course on the horizon at the given time. The degrees of the Asuddha sign which are above the horizon and called Bhukta or passed degrees are found as follows :

If the rising period of the Asuddha sign : 30d : : remainder of given time : passed degrees of the Asuddha sign.

Add to these passed degrees thus found, the preceding signs reckoned from the first point of Aries and from the sum, subtract the amount of the precession of the equinox. The remainder thus found will be the place of the Lagna from the stellar Aries.

If the time at the end of which the Lagna is to be found, be given before sunrise, then find the Bhukta or passed time of the sign in which the Sun is, in the way above shown and subtract it and the rising periods of the preceding signs from the given time. After this find the degrees of the Asuddha sign corresponding to the remainder of the given time which will evidently be the Bhogya degrees of the Lagna by proportion as shown above, and subtract the sum of the Bhogya degrees of the Lagna, the signs the rising periods of which are subtracted and the Bhukta degrees of the sign in which the Sun is from the Sun's place and the remainder thus found will be the place of the Lagna.

Thus two processes are : one when the given time at the end of which the Lagna is to be found, is after sunrise, and the other when that time is given before Sunrise.

Example :—Find the Lagna at 10 o'clock a.m., on the 9th decrease of Pyatho 1235 B.E. in Rangoon.

The Sayana ravi on this date is 9s 20d 34m at sunrise ; length of day is 27 naris and 42 bijanas or 1662 bijanas and sunrise is 6h 28m or 16 naris and 9 bijanas.

∴ the given time is 3h 32m or 8 naris and 50 bijanas or 530 bijanas after sunrise.

The sun lies in the 10th sign Makara which he has traversed 20d 34m and the rising period of this sign is 311 (see p.194).

$$\therefore \text{As } 30\text{d} : 20 \frac{3}{5}\text{d} : : 311 \text{ bij} : x = \frac{617 \times 311}{30 \times 30} = 214 \text{ bijanas.}$$

Of 311 bijanas he has traversed 214, ∴ it remains 97 bijanas to be traversed in this sign.

To this	97 bijanas of Makara
Add	270 bijanas of the next sign, Kum
and add	163 bijanas out of the sign after next, Mir
making	530 bijanas which corresponds to time given.

Now as at the given time, 163 bijanas have passed in Mîm whose rising period is 242 bijanas (see p.194)

$$\therefore 242 \text{ bij} : 163 \text{ bij} :: 30d : x = \frac{163 \times 30}{242} = 20d 5m.$$

$\therefore$  The Lagna is      11s 20d 5m in Sayana Mîm  
Deduct Ayanasa      0 21 56 precession of equinox

Niyana lagna      10 28 9 on Sunday, at 10 a.m., 11th January 1874, or 9th dec. Pyatho 1235.

### BAHO.

To find the Bahô i.e., the division of the day and night into four parts each, when their duration and the udaya-bijanas or the rising periods of a place are known.

**RULE :** Find how much has yet to be traversed by the Sayana Ravi in bijanas in any sign at any given date at sunrise. To which add the rising period of the successive sign and/or signs. From which if subtractable, once, by the 4th part of the length of the day, call it:

The first Bahô of the Day or Nanet tachetti, morning first beat.  
If second time, 2nd Bahô of the Day or Ney nachetti, day time, second beat.  
If third time, 3rd Bahô of the Day or Ney thonchetti, day time, third beat.  
If fourth time, 4th Bahô of the Day or Nya ne laychetti, evening, fourth beat.

In this way with the  $\frac{1}{4}$  part of the length of the night it is continued, calling it: the first Bahô of the night or nya ta chetti, the 2nd, nya-nachetti, the 3rd nya-thon-chetti and the 4th, nanet lay chetti.

**Example.—**Sayanaravi as given on page 193 is 9s 20d 34m at sunrise and length of day 1662 bijanas.

do.      night 1938      do.

and udaya bijanas as given on page 194 :—

I Mesh	XII Mîm	242 bijanas
II Presha	XI Kum	270 "
III Medum	X Makara	311 "
IV Karakat	IX Dhanu	335 "
V Sinh	VIII Briccha	328 "
VI Kan	VII Tu	314 "

Sayanaravi, in the 10th Sign having traversed 20d 34m  
 $\therefore$  do      do      has yet to traverse 9 26

$$\text{As } 30d : 9 \frac{26}{60} d :: 311 \text{ bij} : x = \frac{566 \times 311}{60 \times 30} = \frac{174026}{1800}$$

$\therefore$ Sayanaravi has to traverse	97	bijanas (time of sunrise)*
Add next 11th sign Kum	270	"
Add next 12th sign Mîm	242	"
	609	"

1st, Deduct $\frac{1}{4}$ of day's duration i.e.,	$1662 - \frac{416}{4} = 193$	bijanas for 1st Baho of the day.
Add next 1st, sign Mesha	$193 + 242 = 435$	"
2nd, Deduct $\frac{1}{4}$ of day's duration	$435 - \frac{416}{4} = 19$	bijanas for 2nd Baho of the day.
Add next, 2nd sign, Presha " 3rd sign, Medium	$19 + 270 = 289$	"
3rd, Deduct $\frac{1}{4}$ of day's duration	$289 - \frac{416}{4} = 600$	bijanas for 3rd Baho of the day.
Add next 4th sign, Karakat	$600 - 184 = 416$	"
4th, Deduct $\frac{1}{4}$ of day's duration	$416 - \frac{416}{4} = 103$	bijanas for 4th Baho (time of sundown).*
Add next 5th sign, Sinh " 6th sign, Kan	$103 + 328 = 431$	"
1st, Deduct $\frac{1}{4}$ of night's duration i.e.,	$1938 - \frac{484}{4} = 261$	bijanas for 1st Baho of the night.
Add next 7th sign, Tu	$261 + 314 = 575$	"
2nd, Deduct $\frac{1}{4}$ of night's duration	$575 - \frac{484}{4} = 91$	bijanas for 2nd Baho of the night.
Add next 8th sign, Briccha " 9th sign, Dhanu	$91 + 328 = 420$	"
3rd, Deduct $\frac{1}{4}$ of night's duration	$420 - \frac{484}{4} = 335$	bijanas for 3rd Baho of the night.
Add next 10th sign, Makara	$335 + 270 = 705$	"
4th, Deduct $\frac{1}{4}$ of night's duration	$705 - \frac{484}{4} = 514$	bijanas for 4th Baho of the night (sunrise time).
	$514 - 97 = 416$	

\* The time of Sunrise and Sunset will be expressed in Burmese respectively as :—  
 97 bijanas or 1 nari 2 pad 7 bijanas after 4th Baho of the night nanet lay chetti kyaw.  
 103 bijanas or 1 nari 2 pad 13 bijanas after 4th Baho of the day nya-ne lay chetti kyaw.  
 And the time given on page 195 will be 114 bijanas or 1 uari 3 pad, 9 bijanas after the 1st Baho of the day nanet tachetti kyaw, ( $97 + 270 + 163 = 530 - 416$ ).

A resume of the planets' Longitudes as calculated by Saunditha method compared with those of the Nautical Almanac and Jyotigantam.

		Sunday 10 a.m. 9th decrease Pyatho 1235 B. E. Burma..		Sunday at 10 a.m. 9th decrease Pyatho 1235 Niyana positions i.e. B. E. Burma.		Results as per Saunditha calculation.		Sayana positions after adding Saunditha.		less 21°—56' Saunditha.		less 22°—5' Jyotigantam.		21°—56' Saunditha.		22°—5' Saunditha.		Jyotigantam.		
	Sayana.		Sayana.		Sayana.		Sayana.		Sayana.		Sayana.		Sayana.		Sayana.		Sayana.		Sayana.	
Sun	..	9 <sub>s</sub> 20° 9'	9 <sub>s</sub> 20° 49'	8 <sub>s</sub> 28° 53'	8 <sub>s</sub> 28° 44'	8 <sub>s</sub> 28° 48'	9 <sub>s</sub> 20° 44'	9 <sub>s</sub> 20° 48'	9 <sub>s</sub> 20° 44'	9 <sub>s</sub> 20° 44'	9 <sub>s</sub> 20° 44'	9 <sub>s</sub> 20° 44'	9 <sub>s</sub> 20° 44'	9 <sub>s</sub> 20° 44'	9 <sub>s</sub> 20° 44'	9 <sub>s</sub> 20° 44'	9 <sub>s</sub> 20° 44'	9 <sub>s</sub> 20° 56'		
Moon	..	6 16 34	6 24	22 6	26 6	2 17	6	3	7	6	25	3	6	25	12	6	27	15		
Mars	..	11 7 13	11 7 43	10 15 47	10 15 38	10 15	15	15	15	11	7	52	11	8	1	11	7	52		
Mercury	..	9 5 37	9 6 36	8 14 40	8 14 38	8 14	14	9	14	9	6	41	9	6	50	9	6	43		
Jupiter	..	6 1 44	6 1 45	5 9 49	5 9 40	5 11	8	6	8	6	3	4	6	3	13	6	0	28		
Venus	..	9 9 32	9 10 20	8 18 24	8 18 15	8 18	18	18	18	17	9	10	43	9	10	52	9	10	31	
Saturn	..	10 3 22	10 3 27	9 11 31	9 11 22	9 10	48	10	2	44	10	2	44	10	2	53	10	3	27	
Rahu	..	1 11 30	1 11 28	0 19 32	0 19 23	0 18	49	1	10	45	1	10	45	1	10	54	..	..	..	
Kethu	..	7 11 30	7 11 28	6 19 32	6 19 23	0 18	49	7	10	45	7	10	54	7	10	54	..	..	..	

## GLOSSARY.

Adhikuppa	Works, portions of which contain subjects on Astronomy.
Adhikuppa-Kumbha	
Adhimasa	Intercalary month ; additive month ; a work treating on same.
Adhimasa-sesa	Remainder of adhimasa which accumulates yearly till it amounted to a month.
Adhimasa-Vinicchaya	decision or investigation on Intercalary months (and days).
Adhimasa and yet-ngin	Intercalary month and day.
Adra	the 6th Asterism.
Akasa-sastra	work on Astronomy.
Amarapoora	the then capital of Burma proper for which the present calculation is made in this article.
Amavasi	new moon ; conjunction of Sun and Moon.
Amsas	degrees.
Angula	a digit ; twelfth part of any dimension.
Anughati	a measure of time ; 60 of which make a ghati or nari ; 3600 of which make a day.
Anukara	a measure of time ; 12960,000 of which make a day.
Anuraddha	the 17th Asterism.
Aryasiddhanta	work on Astronomy.
Asanla, Ashar	20th and 21st Asterism ; the 4th month.
Ashvim, Ashvini, Ashyujja	the 1st Asterism ; the 7th month.
Aslesha	the 9th Asterism.
Asuddha (sign)	the sign incapable of being subtracted.
Asus, Asvas	a measure of time ; sixth of a pala or bijana.
Atā-Kyammat	Kyammat at the beginning of Solar year.
Atā-nari	nari at the beginning of Solar year.
Atā-ne, Atā-yet	Solar new year day.
Atā-avamam	Avamam at the beginning of Solar year.
Atā-yet-lun	excess days at the beginning of Solar year.
Atiganda	the 6th Yoga.
Ati-sighra	increased forward motion.
Ati-vakra	increased backward motion.
Attha, Asta	setting.
Avamam	the remainder obtained when reducing Savana days or lunar days to Khayas ; difference between Lunar and solar months.
Ayana	equinoxes and solstices.
Ayanasas	such as Ottra or Dakkhina yans, (Makara to Medum and Karakat to Dhanu) the Sun in the northern or southern course over the paths called Bahira-vidhi (outer division), Majjhe-vidhi (middle division) and Anto-vidhi (inner division) which are respectively also known as Aja (the goat or Ram) Gona (the Bull) and Naga (The Dragon or Elephant).
Ayusama	The first lies from the latter part of the sign Briccha to the forepart of the sign Mim (Utrasan in Makara).
	The next lies from the latter part of Kan and Mim to the forepart of Briccha and Prisha (Citra in Tu and Ashvini in Mesha).
	And the last one lies from the latter part of Prisha to the forepart of Kan (Punna-phusha and Phusha in Karakat).
	(quantity of) precession of equinoxes ; degrees of the ayana.
	the 3rd Yoga.
Badin	Astronomy or Astrology.
Baho	The intimation of Time by the division of the length of day and night each into four parts which theoretically was the correct method but practically it used to be at the palace of Mandalay by striking a big drum alternately with the chime of a big bell (approximately) at every $7\frac{1}{2}$ naris or English every third hour.

The expression in Burmese is "Baho-si" literally meaning "Centre" and "Drum" but it is more likely that the word "Baho" was originally derived from the Hindi "Pahar" a watch of three hours, which system of Horometry also had the division of the day and night each into four parts (4 pahar din, diurnal watches and 4 pahar rat, nocturnal watches) and subordinate division like the Burmese. The subdivision of the Burmese was the "Moung" a gong, which was struck (nearly) at every nari consecutively with the sinking of the "Phala" a vessel or cup.

This vessel was of a certain dimension made of gold (said to be 8 ticals weight) at the bottom of which was a perforated hole whose circumference was the size of 16 strings of plaited hair of the female human being of Uttra-guru island = 8 strings of plaited hair of the female human being of Jambudipa, the island we live in.

This vessel placed floating on water contained in a bigger one made of silver known as "set-nha-ya-thi-phala" (vessel of the 12 signs of the zodiac so called from the description engraved thereon) was caused to circumgyrate from a fixed point forward and backward designating as "tapat" (one round) and "tapyan" (one return) along the brim of the latter. When this smaller vessel, so regulated after the duration of (about) a nari, sank owing to the water leaking in through the small perforation, it went to count a measure of time termed "tamoung" (a gong) which as it signifies announced the time as one "moung" by the striking of the same.

Eight of these "moungs" thus obtained, went to reckon a Baho, (about  $7\frac{1}{2}$  naris) when as abovementioned the "Baho-sidaw" (the royal drum) in unison with the chime of a "khoung-loung" (bell) was each and alternately struck:

giving 11 strokes for the first Baho,

22	do.	second	"
33	do.	third	" and
44	do.	fourth	" which last

denoted forcibly the beginning of the division of the day and night at sunrise and sundown.

Simultaneously in connection with this announcement of the time from the "Baho-sin" (a tower in the palace where the Baho-si was kept) the four central gates from the cardinal points of the palace (each direction having three gates) in like manner announced the time to the populace who lived outside of the palace.

This contrivance of regulating time by the Clepsydra was also no doubt derived from the Hindus as the following passage excerpted from a Hindu work, describes the dimension and construction of the vessel.

"If you bore in a piece of wood a cylindrical hole of twelve fingers' diameter and six fingers' height, it contains three mana water. If you bore in the bottom of this hole another hole as large as six plaited hairs of the hair of a young woman not of an old one nor of a child, the three mana of water will flow out through this hole in one ghati."

Whilst the Burmese struck the Drum and the Bell, the Hindus did likewise but in some instances instead of the beat of the bell, they blew a winding shell called "Sankha".

Except twice during the equinoctial months when then there are 30 naris for the day as well as for the night, i. e. when the Sun is at the Vernal and Autumnal Equinoxes say at Tagu and Thadinyut (Mesha and Tu), the above description of the intimation of the Baho by the uniform mode of sinking the "phala" occupying an equal space of time all throughout the year and to be in conformity with the division of the length of the day and night at the 4th. Baho apparently is not correct.

Tentatively five other "phalas" so constructed respectively of varying capacities as to regulate their sinking in accordance with the length of the day and night (of the seasons) should be at least employed, so that approximately the beat of the fourth Baho coincides with the time of sunrise and sunset (at least once a month).

the 12th month.

name of a moveable Karana,

enigmatically for 5.

works on Astronomy and Astrology.

a work on Astronomy.

Bala-guni

Balava

Bana

Bara-gudi and Bara-Kothi

Baravi

Beda-vijja	a work on Astronomy.
Bhadrapada, Parabhike	25th or 26th Asterism ; the 6th month ; also written Bhadra.
Bhagana	revolution through the signs.
Bhakarasayadaw	A Buddhist archbishop who compiled a commentary on the Astronomical work "Makaranda."
Bharani	the 2nd Asterism.
Bhashu	vasus, deities ; enigmatically for 8.
Bhasuti	a work on Astronomy.
Bheda	the vedas, enigmatically for 4.
Bijana	a measure of time ; 60 of which make a nari or 3600 of which make a day.
Bhishati	name of a moveable Karana.
Bhoutti	Bhukti, Bhuktamsas, Bhoga, traversed portion ; Bhogymasas to be traversed.
Bhuja	an argument when gola is even, taken as it is and when uneven deducted from 3 signs ; enigmatically for 2.
Bhuja-phala	result of operation, by the equation of Bhuja and according to the Jydas.
Boh	the datum or elements on which the Astronomical calculations are made, which are six :—
	1. Suryamasa or Solar months. 2. Chandramasa or Lunar months. 3. Savana, civil or terrestrial days. 4. Tithis or lunar days. 5. Adhimasa or Intercalary months. 6. Tithikshaya or omitted lunar day.
	There are two kinds of Boh, as given in Adhi-Kuppa Kumba :
	Sujidhat Boh consisting of (i) Kyammat, (ii) Avamam, (iii) Yetlun (iv) Ucca-boh, (v) Yetsan and (vi) Adhimas ; and Byanjada Boh consisting of (i) Inga, (ii) Bhuddhahu, (iii) Kyathapade, (iv) Thaukya, (v) Sane and (vi) Rahu.
	The first kind of Boh has already been referred to in above.
	The second class of Boh means the elements similar to the first, on which the calculations are made for the mean positions of the planets, Mars, Mercury, Jupiter, Venus, Saturn and Rahu.
Boh-tika	A commentary on the elements of Burmese Astronomy.
Boh-twet-nee	method of calculations made by means of the Bohs (elements) which are done by two ways, viz :— "Hnit-boh-twet-nee" and "Yet-boh-twet-nee".
	By the former, the number of Savana days with the Kyammat remaining, (tithi-khaya) and accumulated tithis with epact at the beginning of a given Solar year are sought.
	Whilst by the latter, the number of Solar months, Intercalary months, Lunar months, Lunar days, Savana days with Kyammats and the number of days (Suddadin) since the beginning of the Solar year at a given date are sought.
Bouti-let-yo	a work on Astronomy.
Brahma-siddhanta	a work on Astronomy.
Briccha	the 8th sign (Scorpio) of the Zodiac.
Byaggha-cariya	the wandering about of a tiger.
Byaghata	the 13th Yoga.
Byatipatha	the 17th Yoga.
Camma	enigmatically for two.
Cara	variable ; moveable.
Caraddha-Carasava	ascensional difference.
Catuppada	one of the fixed Karanas.
Chandra	the Moon.
Chandramasa	Lunar months.
Chara-Khanda	ascensional difference for a given place.
Chaya	shadow.
Chaya-purusha	shadowy man ; a person who came out of the Sun to deliver the "Suryasiddhanta."
Chitra, Citra	14th Asterism ; the 1st month.
Chula-muni	Astronomical work.

Dakkhinayan	southern course.
Desantara	the distance of any two meridians ; difference of longitude of places.
Deva	gods ; enigmatically for 33.
Devinda	enigmatically for 933.
Dhanasiddha	the 23rd Asterism.
Dhanu	the 9th sign (Sagittary) of the Zodiac.
Dhiti	the 8th Yoga.
Dhuva	the 12th Yoga.
Digha	enigmatically for 2.
Dinaddha	half the time of Sun above horizon.
Dinaman	the length of day.
Driganitha	the system of Astronomy as introduced by Europe methods.
Dwapara-yuga	a portion of the age of the world called Mahayuga which was the third period and consisted of 864000 solar years.

Gamya	to be past.
Gata	past.
Ghatika	a measure of time ; 60 of which make a day.
Gola	the division by 3 of the difference between the ucca and madhya etc. whose quotient indicates the Bhujia and the operation of the equation whether Meshadi, additive, and Tuladi subtractive.
Gunā	enigmatically for 3.
Graha-chanda	
Graha-laghava	

} works on Astronomy.

Haragon	(Ahargana) or Savana, the number of days from a given epoch to the time for which a computation is made. Makaranda uses the word "Haragon" and Samdittha, "Savana."
Hasana	the 14th yoga.
Hastha	the 13th Asterism.

Inda	the 26th yoga.
Ithta	required ; desired.

Janamapatti	an astronomical work.
Jeyha	the 18th Asterism ; the 3rd month.
Jya	tables for calculations ; enigmatically for 4.
Jyotitattha	astronomical work.

Kala	a measure of time ; seconds.
Kali-yuga	the last portion of the age of the world called Mahayuga, which is the present period of time, it consists of 432000 solar years of which 5015 years have already expired.

Kalpa	An aeon which consists of 1000 times a Mahayuga 4,320,000,000 years, at the end of which, it will bring about the destruction of all that exists. Of which 1,955,885,015 have already expired.
Kanda	the 10th Yoga.
Kanni-atwin-woon-mingyi	(interior minister of Kanni) was a learned minister of the two last Burmese Kings, known also by the name of Mingyi Oo Hpo Hline.
Kanya,-kan	the 6th sign (Virgo) of the Zodiac.
Kara	a measure of time ; 216000 of which make a day.
Karaj	a name of Moveable Karana.
Karakat	the 4th sign (Cancer) of the Zodiac.
Karana	half a tithi ; half a lunar day ; there are eleven of these ; four of which are fixed and occur only once in the lunar month while the other seven (cara) moveable ones are repeated each of them eight times.
Karinanda rupamanu	enigmatically for 14198.
Kason	2nd month about May/June.
Kaulava	name of moveable Karana.
Ketu	shadowy planet ; Moon's descending node, known as the tail of the Dragon.
Kha	enigmatically for cipher.
Khandam	section ; quotient of Bhuja by 225, indicating the Jya.
Khaya, Kshaya	expunged or omitted tithi.
Khinka	enigmatically for 90.
Kinstughana	one of the fixed Karanas.
Kranna	enigmatically for two.
Krishna paksha	dark half which lasts from full moon to new moon or while the moon is waning. The other half is called Sukla paksha, the bright half, lasting from new moon to full or while the moon is waxing.
Krita-yuga	the first portion of the age of the world called Mahayuga which consisted of 1728000 solar years.
Krittika	the 3rd Asterism ; the 8th month.
Kum	the 11th sign (Aquarius) of the Zodiac.
Kyammat	in the operation of reducing a year to Savana days, the remainder resulting therefrom which should be in naris, bijana etc. has been expressed as fraction of a day.
Kyin-kan-Ko-yin-gyi-let-yo	A work containing texts on Astronomy.

Laghu-Sangraha	astronomical work.
Lagna	the rising sign ; ascendant ; the point of the Ecliptic which is at any time on the eastern horizon.
Lai-jet-thai	being operated upon in four places.
Lai phan-sin	being arranged four times.
Lai'un	the number of lunar months in excess of solar months.
Lanca	an imaginary place from where the prime meridian is considered for all astronomical computation.
Lasan	increase of Moon ; bright half of moon.
Lasok	decrease of Moon ; dark half of moon.
Latat and Yetngin-twet-nee	method of calculation of Intercalary months and days.
Lipta	minute ; vilipta ; second.

Madhya	mean ; middle.
Madima-tike	mean Sun.
Madima Tsan	mean Moon.
Magha	the 10th Asterism ; the 11th month.
Maha-bala-chanda	{ works on Astronomy.
Maha-makaranda	
Maha-yuga	the great Yuga consisting of the four periods of 4320000 years, viz: Krita, Treta, Dwapara and Kali, during which Dhamma (the observance of the law) is said to stand respectively on 4, 3, 2 and 1 legs.

Makara	the 10th sign (Capricorn) of the Zodiac.
Makaranda	a work on Burmese Astronomy.
Mala-masa	a work on Burmese Astronomy.
Manda	difference between ucca and madhya etc. anomaly ; increased forward motion.
Manda-phala	equation of anomaly.
Mandatara	decreased forward motion.
Mandoccha	the higher apsis ; apogee.
Masa	enigmatically for 12 ; months.
Mayasura	the demon who received the Astronomical work "Surya-siddhanta" through "Chayapurusha" from "Surya", the Sun.
Medium	the 3rd sign (Gemini) of the Zodiac.
Meru	enigmatically for one.
Meshha	the 1st sign (Aries) of the Zodiac.
Meshadi	beginning with the sign Meshha.
Meshha-sankrantî	the passage of the Sun (or other planets) into the sign Meshha (Indian Aries) called here Ata-ne, Ata-yet, Atet-ne, known as the "Thingyan-tet" (sankram) the solar new year day. The time of this as calculated for the year 1235 B. E. is on Monday the 2nd. decrease of Tagu and 87 Kymmats = 6 naris 31 bijanas and 30 karas or in English 3hrs. 36ms. and 36secs. a.m. With this are also two other terms "akyat-ne" and "akyat-ne". The former signifies the day on which the Thingyan falls or begins which is 2 days and 134 kyammats = 2 yet 10 naris 3 bijanas or in English 2 days 4 hrs. 1m. 12secs. before the end of the (previous) solar year. Therefore in the example given here the Thingyan kya is on Friday the 14th increase of Tagu at 56 naris 28 bijanas and 30 karas or in English 10 hrs 35ms. 24secs. p.m. of 1234 B.E. And the latter term signifies the intermediate i. e. the period intervening between the "akyat-ne" and "atet-ne". The whole thing is called "akha-dwin" i. e. the period during which a (religious) festival is observed. During this time a water throwing festival is also kept up.
Migasi	the 5th Asterism ; the 9th month.
Mim	the 12th sign (Pisces) of the Zodiac.
Mula	the 19th asterism.
Mohnyin-min-tara-gyi	the King that expunged 798 years in the present era but was not successful.
Muni	enigmatically for seven.

Nadaw	the 9th month about December/January.
Naga	one of the fixed Karanas.
Nakkhats	asterisms, constellations, the lunar mansions which are 27, each occupying $13^{\circ} 20'$ on the Ecliptic.
Nari	measure of time ; 60 of which = a day.
Nari-Karana	work treating on time.
Nata	meridian zenith distance.
Navami	the ninth.
Nayon	3rd month about June/July.
Ne-kyat-sara	work on Eclipse of Sun.
Nhit-boh-twet-nee	see "Boh and Boh-twet-nee."
Nhit-kywin	short era also called Rassa ; the remainder of expunged years for the purpose of shortening calculation. Hnit means a year as Savava hnit or Ayana hnit (tropical year) ; nakkhatti-ka hnit (sideral year) and Sarya or Saura hnit (solar year).
Nisaddha	half time of Sun below horizon.
Niyadum	planet when remaining stationary.
Niyana, Nirvana	the longitude of a planet without the ayanamisas (precession of equinox).

Oocha, ucca	height ; extreme distance.
Oodaya-udaya-bijanas or asavas	bijanas of the rising signs, oblique ascension.
Ottra-phalaguni (uttra)	the 12th Asterism.
Ottra-San	the 21st Asterism.
Ottra-parabhike "	the 26th Asterism.
Ottra-Yan "	nor hern course.
Ovanna	the 5th month also called Sravanna.
Pabba, Palava	name of a moveable Karana.
Pad	a measure of time, 4 of which make 60 bijanas or ghatis or one nakkhat, Asterism.
Pakkha, paksha	half the lunar month ; in Burmese Lasau pakkha and Lasök pakkha
Pala	a measure of time ; minute.
Panchanga, pattra	(Hindi) a calendar so called from the five articles contained in it (five limbs) viz : (i) tithi (lunar day) (ii) vara (weekday) (iii) nakshatra or nakkhat (asterism) (iv) yoga (junction star) and (v) Karana ( $\frac{1}{2}$ tithi).
Parahita or vakya	system of calculation based on corrected tables.
Parigha	the 19th Yoga.
Para	node of a planet.
Phalaguna	the 12th month.
Phuta	true ; rectified (longitude).
Poppasaw-Rahan	King o' Pagan who was a monk before he became king, introduced the present Burmese era.
Pousha, pusha, phusha	the 8th Asterism ; the 10th month.
Prisha Presha	the 2nd sign (Taurus) of the Zodiac.
Pruppa-phalaguni	the 11th Asterism.
Pruppa-San	the 20th Asterism.
Pruppa-parabhike	the 25th Asterism.
Punna bushu, phusha	the 7th Asterism.
Punnami	full Moon, day of opposition of Sun and Moon.
Pyatho	the 10th month about January/February..
Rajamathan	a work on Astronomy.
Rahan	a monk.
Rahu	the shadowy planet ; moon's ascending node known as the head of the Dragon.
Rama	enigmatically for three.
Rasa	enigmatically for six.
Rasi	sign of the Zodiac containing 30 amsas or $2\frac{1}{2}$ nakkhats.
Rassa	short era also called "nhit kywin."
Ravi-madhyya	mean Sun.
Rekha	meridian.
Revati	the 27th Asterism.
Rohini	the 4th Asterism.
Rudiya	the 16th Yoga.
Rudra	enigmatically for 11.
Rupa	enigmatically for 1
Rupakhinkarudra	enigmatically for 11901.
Sadaya	the 21st Yoga.
Sakuni	one of the fixed Karanas.

Salivahana saka	Era ; an Epoch which commences 78 years after the Christian era or 3179 years Kali-yunga or 560 years before the Burmese era, instituted by King Salivahana. Indian era distinct from another well-known era "Vikramaditya."
Sama	even motion.
Samdittha	the present astronomical work on which this article is based upon.
Samvatsara	Luni-solar year (Hindu).
Sankram-nari	{ Astronomical works.
Sankranta	entry of Sun into a sign.
Sankranti	gnomon.
Sanku	a work treating on the Eclipses of Sun and Moon.
Saravijjodaya	astronomical work.
Sasinka Kuppatha,	the 24th Asterism,
Satabisha	solar months
Sauramasa	natural or civil days ; also called haragon or Ahargana
Savanas	the Longitude of planet with the ayanamsas (precession of equinox) added. Without the latter is called Niyana.
Sayana	the 5th sign (Leo) of the Zodiac
Seinha, Sinh	remainder
Sesa	text books or treatises
Siddhanta	{ Astronomical works
Siddhantachandrika	the 23rd Yoga
Siddhantasiromani	swift
Siddhi	increased forward motion
Sighra (singha)	the wandering about of a lion
Sighra-tara	astronomical work
Sihaja-cariya	the 20th Yoga
Siri Maha suryasiddhanta,	the 4th Yoga
Siva	the 5th Yoga
Soubhagya	the 22nd Asterism ; the 5th month
Soubhana	name of year of Jupiter's cycle of 60 years
Sravanna	astronomical work
Srimukha	the 23rd Yoga
Subba-Bhauma-siddhanta,	true Sun
Subha	true Moon
Subhatta-tike	the 25th Yoga
Subhatta-ts'an	number of days counted to a certain date since the beginning of solar year.
Subrahma	the 7th Yoga
Suddadin	the 24th Yoga
Sukamma	bright half of the Moon ; from new Moon to Full Moon
Sukka	the 9th Yoga
Suklapaksha	the Sun
Sulaya	solar months
Surya	a well known Indian Astronomical work, professed to have been revealed by the Sun, more than two millions of years ago.

Tabodwe	the 11th month about February/March
Taboung	" 12th " " March/April
Tagu	1st " " April/May
Taninanway,	the Sun } Mars is called Inga, Mercury Buddhahu,
Taninla	" Moon } Jupiter Kyathapaday, Venus Thaukya, Saturn Sane. The week days are distinguished by suffixing the word ne (day) to these
Tara	a star
Tasoungmon	the 8th month about November/December
Tawtalin	" 6th " " September/October
Thadingyut	" 7th " " October/November
Tetila	name of a moveable Karana
Tika	a commentary
Tithi	luni-solar day ; thirtieth of a lunation.

Tithikshaya Tretra-yuga,	expunged tithi ; subtractive day a portion of the age of the world called Mahayuga which was the second period consisted of 1296000 solar years.
Tu Tuladi	the 7th sign (Libra) of Zodiac beginning with the sign Tu

Vakra	backward motion
Vakya	system of astronomical calculations based on corrected tables supposed to have been given by Aryabhatta
Vaniccha	name of a moveable Karana
Varajim	the 16 Yoga
Vardhati	the 27th Yoga
Vasus	a class of deities
Vi-angula	sixtieth part of angula or digit
Vikala	stationary
Vilipta	second
Viriya	the 18th Yoga
Visakha	" 16th Asterism, second month
Visakumbha	" 1st Yoga
Visuvachaya	shadow of gnomon when Sun is on equinoctial points
Vivara	difference between two Jydas ; remainder of Bhaja divided by 225
Vutti	the 11th Yoga
Vyatipata	" 18th "

Wagaung	the 5th month about August/September
Wagy-i-tat	big lent repeated, when extra month of 2nd Waso of 30 days and an extra day making Nayon with 30 days are inserted.
Wa-ngai-tat	small lent repeated, when an extra month of 2nd Waso of 30 day only is inserted.
Waso	the 4th month about July/August.
Watat	lent repeated, intercalation.

Yet-boh-twet-nee, Yet-lun	see under "Boh" and "Boh-twet-nee" epact ; Moon's age in tithi at commencement and generally in excess of solar year.
Yoga	the time which Sun and Moon together accomplish $13^{\circ} 20'$ of space of which there are 27.
Yuga	an age of the world ; enigmatical y for 4.



## NOTES ON THE HISTORY OF HANTHAWADDY

(concluded from Vol. IV, Part I)

### PART IV.—BURMAN RULE IN HANTHAWADDY.

A Toungoo dynasty had conquered Pegu, and Toungoo had become absorbed in Pegu. A Peguan dynasty had conquered Ava and in the course of time Pegu had become absorbed in Ava. The uprising of the Talaings under Buddha Keti in 1740 had been the uprising of a nation and when Alaung Paea took up the cause of Burma, it was again a nation rising against a foreign power. Henceforth there was no middle course for Burman and Talaing, but the long arbitrament of a national war. In former records, it is a matter calling for no remark that Burmans and Talaings were to be found fighting on either side, but this ceases to be the case. The greater part of the fighting was carried on within the limits of what was afterwards Rangoon District and the present District of Hanthawaddy was the scene of the most notable achievements. The investment of Dala was signalized by the Talaing leader floating through the Burman lines disguised as a corpse and returning the next day with reinforcements to raise the seige. The seige of Syriam lasted more than a year and the place was only conquered in the end by a courageous stratagem. The Burman Army was encamped at Bogyok and to deceive the enemy a festival was held with drums and music. The sounds floating over to the Talaing city on the hill induced the leaders and the watchmen to relax their vigilance. Under cover of the revelry, a devoted band of thirteen warriors, the "Golden Company" made their way over the walls and flung open the gate to the Burman Army. They rushed in through the Wettha taga, the gate where Nga Tha Hlyin in the older days had killed the legendary boar, and put the inhabitants to the sword. After Pegu had been taken at the end of a two months' seige, the jungles in the Dawbon Township north of Syriam received the royal fugitives. The exploits of various heroes receive due acknowledgment in the chronicles and there is a pleasant picture of a Talaing leader, who had been taken prisoner after many valiant deeds, being received with honour by the Burman king. The Burmans seem to have used their victory with moderation and Alaung Paea took in marriage the daughter of the King and honourably entertained the monarch when he deposed. But there were continual risings until the first British War in 1826 when the Talaing Governor of Syriam again made an attempt to recover the independence of his country. It is on record that in 1826 there had ceased to be any national antipathy in Pegu, the extermination and banishment of the leaders and "judicious treatment of the conquered having long since removed any appearance of distinction between Burman and Peguan." No individual preferences were shewn and "all enjoy equal rights and privileges, and both are eligible to fill the highest posts under government.\*" This however can hardly have been the case in view of the serious depopulation of the District of Hanthawaddy which took place during this period and the repeated risings. It is more probable that there was to some extent a common union against an invader from over seas and that the differences between Burman and Peguan were temporarily set aside.

Towards the end of the eighteenth century more material concerning administrative detail is available. The works of Sangermano, Symes Administration, and Cox are supplemented by the revenue inquests of 1784 and 1826. The rise of the Third Empire had once more relegated Syriam to a subordinate position, and even after Alaung Paea had achieved the final conquest of

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\* Snodgrass, page 87

the Talaings, Pegu still remained the residence of the Governor of Hanthawaddy. By this time Syriam had become practically a foreign colony, and by repeated experience had been shown to lie too open to attack. Rangoon was less exposed and also less prominent in Peguan history, here therefore the Burman monarch established the chief port of his empire. The Governor of the Thirty Two Provinces of Hanthawaddy, residing at Pegu, was known to the English as the Governor of Rangoon and his establishment was divided between the two places. He presided over the Yon-daw which included the Commissioner of Customs, and few Accountants, Scribes and Auditors (na-khan). Subordinate to him, and it appears, also members of the Yon-daw were the Inspector of the Waters (ye-wun), Commandant (sitke) and Inspector of Shipping and Port Dues (akauk-wun). The Governor of Syriam appears to have been subordinate to him but to have stood higher than the ordinary head of a township. The Governor of Dala, though inferior in rank to the Governor of Hanthawaddy was independent of him. There was a host of minor officials, pe-nin, sit-kut, ye-baw, charged with various branches of administration or ceremonial.

Of these the most important administratively were the Myothugyis, at the head of each province or township. As in Burma proper these are of particular interest as representing the only approach to organization on hereditary territorial lines. The Myothugyi was the connecting link between the people of the township organised tribally or by occupation and the external official hierarchy. In almost every case where the township had not relapsed into jungle the same family seems to have held the post at latest from the administrative reorganisation by Tha Lun Min in 1632, until the British occupation; in many cases a recorded pedigree takes them back to the later years of the 17th century. Below them the actual executive comprised the heads over the Karens, the heads over the Sabeins, the heads over the elephants, and over the buffaloes and over the horses. These had to distribute the demand and "collect the revenue proportionately as among ears of corn that are long or short or trees that are small or high." The Myothugyi in addition to judicial duties was charged with receiving the revenue from these people and paying it in to the royal treasury.

The fees and revenues of a township were sometimes alienated temporarily as a mark of royal favour, or permanently; the revenues of Dala for instance were always allotted to the Chief Queen for the time being. The recipient in such cases was termed the "myo-sa", and after deducting the dues of the local authorities the balance was remitted to the "myo-sa" instead of to the crown. The chief interest however of the administrative organisation consists in its being organised within the township not on territorial but on personal lines. The existence of a personal and not of a territorial link is characteristic both of Ava and Pegu.

It is probable that copies still exist of the revenue inquests of 1000 B.E. and of 1126 B.E.; none however has yet been made public. It is not until the revenue inquest of 1145 B.E. (1784 A.C.) that first hand documentary evidence is available. It had for some time been supposed that no records either of this enquiry or of the subsequent one in 1164 B.E. were still in existence, but copies have been found in the Bernard Free Library for four townships in the case of the earlier enquiry and for almost all the townships in the later enquiry. The main heads of revenue were Land Revenue, Fishery Revenue and Poll Tax, subsidiary items being brokerage dues, customs and octroi. The unit of land revenue was the "carucate", the area which a pair of buffaloes could plow. It was assessed in silver in some townships so early as the reign of Sinbyumya Shin (1763-75), in other townships it was still assessed in kind in 1803. At the earlier survey 2 tolas of silver or 10 baskets of paddy was due on the unit area of land, twenty years later the demand in kind had been raised to 50 or 55 baskets of paddy. Fruit trees paid a contribution either in kind or silver, usually levied not on the trees but on the cultivator. Thus in 1164 B.E. betel cultivators had to pay a tax of 5 tolas of silver. The tax was not confined to fruit trees, it was levied also

on wood oil and other trees of commercial value. The ingenious gradation of the wood oil tax in 1784 is worth attention, the workman if they tapped near the top of the tree only paid one tola a man, if however they adopted the more wasteful practice of tapping near the bottom they had to pay twice this amount.

The Fishery Revenue was also a tax per head, and in this case the second reveals an increase upon the former both in graduation and differentiation. At the earlier date only tank fishing is taxed, the fishermen paying two to three tolas a head. In 1803 these men pay five tolas while those using a casting net pay one tola and those using a drag net pay two tolas a head. Salt workers pay a small tax of one "mat" a head.

Minor sources of revenue were bee's wax and elephant's tusks, commodities which seem to have changed greatly in relative value since those days. Thus the Karens of one village paid an annual tax of 5 viss of wax, or 250 viss of ivory, or 6 tickals and one "mat" of silver. But the Karens, and the Sabeins as well, seem as a rule to have paid nothing beyond a poll tax. This ranged from nine to ten rupees per household, and as among these tribes a whole village then inhabited a single dwelling the tax was not so excessive as would at first appear.

The purity of the silver in which the tax had to be paid is carefully recorded, as in most cases are the dues of the local officers engaged in its collection. Even at that time the tax collector was not wholly devoid of guile, thus some of the villages where land revenue was paid in kind were also charged with the grain likely to be eaten in the royal granaries. And they had also appreciated the utility of taxation as a social instrument adapted to other ends than the mere raising of revenue, in many of the townships the marriageable boys and girls who neglected their duties and opportunities were liable to taxation. As however they had to pay no more than two pieces of flat copper wire the tax can not have contributed greatly towards increasing the population.

The early arrivals from the West had been isolated adventurers sometimes  
The Foreign Factories. merchants such as di Conti, Ceaser Frederic and Fitch, sometimes little better than pirates such as de Suarez and de Brito. It appears that an English factory was the first to be established after the downfall of de Brito's tyranny, Syriam having been apparently one of the agencies of the East India Company formed in Indo-China in 1612. In 1631, the Dutch were established there. But a dispute occurred between the Talaing Governor and the Head Factory of the Dutch in the middle of the 17th century and all foreigners were ejected. The Dutch never returned; nor does it appear that the Burmans and Peguans were ever anxious for the return of either; "it was impossible that they should forget the conduct of Gonzales or de Brito, or should draw distinctions between Portuguese adventurers and British and French officers, subsequently events only proved how right they were." \* In 1695 an English sailor died intestate and his property according to the custom of civilized countries † at the time escheated to the crown. This was made the pretext for obtaining the establishment of factory and although permission was gained in 1698 nothing further was done and matters appear to have continued on a somewhat indefinite footing until 1740. At this time, there was an English factor in charge, a Mr. Smart, who attempted without success to keep in with both parties, deceiving apparently both of them alike. On the final victory of the Talaings, the factory was burnt down and the agency had to be withdrawn. The missions which were also thereby put in peril were shortly re-established; the factories were never rebuilt there.

The invasion of Alaung Peya however gave a further opportunity of intrigue which was exercised by English and French alike. Although both parties had a foot in either camp, the English in the main supported the Burmans and the

\* British Burma Gazetteir Volume I, Page 295.

† The leading case is quoted in "A Sentimental Journey," by Sterne.

French the Talaings. In the event the Burman King magnanimously overlooking their duplicity granted the English permission to build a factory at Rangoon. Just afterwards however the English and French ships, including the vessel of which the captain had been treating with Alaung Peya, joined the Talaing boats in an attack upon the Burmans. They were beaten off and the permission to establish a factory withdrawn. Other factories had also been permitted outside the limits of Hanthawaddy District, but the fortunes of these it is unnecessary to follow. From this time trade was conducted by isolated merchants and not by the recognition of factories.

#### PART V.—ARCHÆOLOGY.

The archaeology of Hanthawaddy has never been studied ; casual observation reveals three main lines of enquiry each of which would amply repay research. There is the problem of the laterite ruins, the problem of the pagodas of the Letkaik series and the problem of the Talaing cities. Nothing has been effected yet, and scarcely anything attempted, with regard to the elucidation of those problems. There is also a Roman Catholic Church at Syrian dating from 1750 A.C. which is under the care of the archaeological department.

All down the Syriam kondan and for miles inland in the Syriam Subdivision there are found great blocks of laterite remains. At Pada there are laterite ruins connected in tradition with Aneinda raza the last prince of the Dynasty preceding that of Nga Than Hlyin. At Twante there are laterite remains of a building erected on three terraces after the fashion of "Talaing" pagodas, it is talked of however as a palace. At Kyaikkauk the pagoda is built entirely of laterite and that at Kyaikkalo is of laterite faced with brick. Both of these pagodas are octagonal. Connected in legend with that at Kyaikkalo are the pagodas known as the Kyaikkasan, Thadugan and Kyaukwaing, which in their present form are built of brick. These pagodas and other laterite ruins are included in a series of similar remains found between Pegu, Syriam and Thaton, their distribution corresponds roughly with that of Orissa colonists, they are all of Buddhist origin so far as identification is possible at present, traditions relating to them have been forgotten or else relate to a period antedating the arrival of the Talaings, fragments of sculpture have been definitely connected with Orissa. The Talaings so far as can be ascertained have always built in brick. It is difficult to resist the provisional conclusion that these pagodas and other buildings were built by the Orissan colonists at some time between 500 B.C. and 500 A.C.

Other pagodas may conveniently be grouped as the Letkaik Series. This includes the brick pagodas at Letkaik, Dedanaw, Ingalon, Sapagan, Kungyangon, Mingaladon, and possibly also the Shwe San Daw at Twante, the Danok pagoda and the Kyouktan pagoda. There are others which it is unnecessary to mention. Those on the Twante side of the Thakutpin creek were at one time known collectively as the "Thirty Seven Pagodas of Angyi". The Letkaik Pagoda which gives its name to the series owes its importance to the existence of some old Talaing inscriptions on the platform. These were considered by Forchhammer to date from the 12th century, and if this theory be correct they are by far the oldest Talaing inscriptions known in Lower Burma. The copy which he examined and translated was from a tracing by Captain Parrot made in 1880 ; the tracing and translation have been lost and the stone pillars have been broken ; only half the inscription now remains. It is perhaps more probable that some of them date from the reign of Razadirit in the end of the fourteenth century, that at Danok is definitely connected with this king in tradition, and that some date from the reign of Dhammazedi towards the close of the fifteenth century. The chronicles apparently gave reason for believ-

ing them to coincide with the date of a mission to Ceylon, and Dhammadzedi organised the most important of those embassies. Detail research may indicate the necessity for distributing the pagodas of this series over a considerable period.

Remains still indicate or have indicated within recent years the existence of walled cities at Pada, Syriam, Khabin, Myagon (Sapagan) and Twante; the first two were in the province of Syriam and the last three fell in Dala. Of the towns of the Hanthawaddy of the Burman regions those at Hlaing, Tabu (Htanbu), Hmawbi and Mingaladon fell within the limits of the District. In the sixties Hlaing was specifically excluded from the area to be granted as waste land, but material remains have been converted into ballast for the railway and the demand for paddy has accelerated the process of natural decay. At Syriam the older inhabitants can still trace the old walls and identify the gates by name.

There are remains at Syriam of the Portuguese city of the 15th. century.

J. S. FURNIVALL.



## BURMESE PROVERBS

(continued)

5. ၄၁:၃၃:၆၈၁ ၄၁:၁၂၅၀၄၁

To reject the broiled fish for a wet one.

Once when Brahmadatta was ruling in Benares, the Bodhisat, the future Buddha, was reborn as Sakka, King of the gods. At that time a certain young Brahmin of Benares acquired all the liberal arts at Takkasila. Being specially proficient in archery, he was known as the clever Little Archer. His master thought, "His knowledge has become equal to mine", and being highly pleased gave him his daughter to wife. He took her and set out for Benares. In a forest on the way he met a wild elephant and was attacked by him. The Archer sent an arrow at him with such force that it pierced his forehead and came out at the back of his head. The elephant fell down dead. Proceeding on their way they came to another forest infested by a gang of fifty robbers. On seeing the rich ornaments of the wife the robbers were about to capture them. But the chief robber, being skilled in reading a man's character knew the Archer at a glance to be a great hero and would not let them rise up against him. While the robbers were roasting meat, the Archer sent his wife to ask from them just a bone of meat, hoping thereby to get some meat also. The wife kept strictly to the letter of the request and would not take any meat. So the robbers gave her a bone. When the Archer saw the bare bone without any meat attached to it he was displeased and sent forth a challenge to the robbers in these terms:—"Hoping to get some meat, I asked for a bone. Must they give me only the bone?" The robbers said, "What! does he think he is the only man here? are we merely women?" And threatening they rose up against him. The Archer killed forty-nine robbers with the same number of arrows. He had brought fifty arrows in his quiver and as he had already spent one on the elephant there was one arrow short for the fiftieth robber, who happened to be the chief robber. The Archer then knocked him down and holding him bade his wife hand him his sword in order to cut off his head. But the wife at that very instant conceived a passion for the robber and placed the hilt in his hand and the blade in that of her husband. Thus her accomplished husband was killed. The robber took the woman and as they went along he inquired her of her past history. She told him that she was the daughter of a professor at Takkasila, that she was given in marriage to the young man and that owing to her love for him, the robber, she had caused her husband's death. The robber became terrified thinking, "This woman has killed her lawful and matchless husband. As soon as she sees some other man, she will kill me too. I must get rid of her." As they went along, they came to a river and he said, "My dear, there are ferocious crocodiles in this river; what are we to do?" She said, "My lord, first carry all my ornaments to the other bank and then come back and take me across." "Very well," he said and jumped into the river and swam across. When she saw that he made no sign of returning she implored him in various ways to come back; but he only said, "You are not a faithful woman" and left her. Thus she lost both husband and lover. When Sakka, King of the gods saw her weeping in distress he thought he would go and teach her a lesson. So he took Matali, his charioteer and Paficasikkha, the celestial musician to the bank of the river and said to them, "Matali, do you become a fish; Paficasikkha, you turn into a kite and I will become a jackal. I will take a broiled fish in my mouth and go in front of this woman. When I get there you, Matali the fish, are to leap up out of the water and when I the jackal seeing the wet fish shall drop the broiled fish in my mouth and jump up to seize the wet fish, you Paficasikkha the kite are to pounce upon the broiled fish and fly up

into the sky, and you Mātali are to fall into the water." Accordingly, they acted this scene at the end of which the jackal having lost both the broiled and the wet fish was seen sitting down in a melancholy mood. When the woman saw him she laughed heartily with a voice like the sound of bamboo split in two. When the jackal asked her why she laughed so, she answered, " O foolish jackal, you are indeed a silly creature. Having lost both the broiled and the wet fish, well might you grieve." The jackal replied, " O foolish woman, it is easy to see the faults of others but one's own it is difficult to see. Methinks, you who have lost both husband and lover ought to be in the lowest depths of grief. As for me I could easily get another fish. But where will you get another husband as the matchless one you have killed ? It is you who ought to weep a hundred times, a thousand times, a ten thousand times more than I do," Hearing these words, she felt greatly ashamed and promised to lead a virtuous life and be constant in her affections. Sakka returned to his own abode.

6. သန္တားပါး ပွဲဗီးပါ

Instead of the rice-stealer, the chaff-stealer is caught.

A certain man was in the habit of stealing chaff from a house. The owner did not know anything about it. As time went on, it happened that one night another man stole some husked rice from the same house. The owner becoming aware of the fact waited the following night together with some of his men. And the chaff-stealer came as usual and was caught and imprisoned.

7. အောက် လျော်းသီး မြင်းဝယ်ဗုံးရေးလား။

Had I known that my father-in-law had died, might I not have bought the horse for a ride ?

A father-in-law and his son-in-law were travelling on a long journey. When they reached a desert the father-in-law was overcome with fatigue and gasped for water saying to his son-in-law, " Pray get me some water or I shall die." The son-in-law went in haste and luckily found a well. He got some water and was returning when he met a horse-man, who said, " Friend, I am very thirsty. Give me your water and take my horse." The other replied, " I have my father-in-law dying for water. I must give it him. I do not care for your horse." But when he got to his father-in-law, he found him dead. The son-in-law then said, " Had I known he had died, might I not have obtained the horse."

8. အချို့သွားမြှု ရဖို့ထိသလား။

I show my teeth out of pain, think you I laugh ?

Once the future Buddha was born as a monkey living close by a river. Devadatta his enemy became a crocodile in the river. One day the crocodile caught the monkey and biting his waist held him in the mouth. The crocodile saw his face and said, " Monkey, how can you laugh when I bite you severely on the waist ?" The other replied, " O crocodile, you will never kill a monkey by biting his waist. Do you not know that the life of monkeys is not in the waist but at the tip of the tail ? I laugh at your blunder " The crocodile believing him released his grip with the intention of biting the tip of the tail. But the monkey quickly jumped and ran up a tree. From there he greeted the crocodile thus, " O fool, I showed my teeth out of pain and you thought I laughed."

9. ဘဏ်ကန်း၊ ဂုဇ္ဇားချက်။

The *garula* at his wits' end turns salt manufacturer.

Once a sea-serpent took the form of a man. A certain *garula* bird also became a man. One day they met. The man-garula seeing the man-serpent felt

all the savage feelings of a *garula* bird towards a serpent, his natural prey, and gave chase. The serpent ran for his life and being hard pressed by the *garula* narrowly escaped by entering the ocean and returning to the abode of the serpents at the bottom of the ocean. The *garula* was disappointed but would not give up the chase. So in the hopes of catching the serpent, should he ever return to the world of men, he himself became a man and lived in the company of a certain number of men manufacturing salt on the sea shore. But the serpent never came back to the world of men and the *garula* died while still manufacturing salt.

10. ၁၄၃၁ၬ။၂၂၇။

Like the Karen who finds a pot of jaggery.

The Karens are fond of sweet things to eat. Unfortunately the palm from the juice of which jaggery is made does not grow in their country. They have thus to depend on Burmese merchants from whom they buy jaggery often paying its weight in silver. Whenever they have a chance of eating it they show their partiality by quickly finishing a whole pot of it. Hence this proverb is used when a man without any regard for decency displays an inordinate desire for anything or when he eats more than he is expected to eat.

MAUNG TIN.



## NOTES AND REVIEWS

### OUR MUSEUM.

At pages 103-106, Part I, Vol. II, of the Journal of this Society, "C. D." gives, under the above heading, short descriptive accounts of the exhibits that have been collected for the Museum to found which, when circumstances permit, is one of the objects of the Society, and promises that a fuller description with the photographs will form the subject of a paper in a future issue of this journal. Since then he has been very busy with works of a more urgent nature, and he made over to me the exhibits for illustration. At the same time I was given the honour to write the fuller description myself, and he very kindly placed at my disposal his knowledge of Pāli and of Buddhism.\*

I had no opportunity to examine the exhibits under group I, and of those under group II, the statuette of Chinese workmanship—No. 1 of "C. D.'s" list—is in fragments and cannot be pieced together to permit of a photograph being prepared. Photographs were prepared of the remaining exhibits, and they form the illustrations to this note.

The arrangement and numbering of the figures do not correspond with those in "C. D.'s" list, and for convenient reference each figure is given two numbers wherever it is necessary. The lower numbers indicate those in his list.

Fig :  $\frac{1}{2}$ , Plate I. To an orthodox Burmese-Buddhist of the present day, this exquisite figure made of bronze, with crowned head and richly ornamented, represents Jambupati or the Buddha in the guise of a king whose dress outshone in wealth and splendour that of the proud king Jambupati. But curiously enough the story of Jambupati has not yet been traceable, on the authority of many eminent oriental scholars, among the canonical books of the Buddhist literature. There is a book in Pāli entitled ඔද්ධාන්‍යාව (Zinme Pannāsa),† alleged to be a collection of the Jātākas or the birth stories of Buddha in his previous lives. The authorship is ascribed to a Buddhist monk of Zimme (Chengmai), and there is a strong belief among some of us that he is the same as the author and composer of the story of Jambupati. It is said that king Bodawpaya (1781-1819) who took a great interest in the authenticity of the Buddhist literature had all the available manuscripts by the above author consigned to the flame, and it is very probable that the original manuscript relating to the above story has met with the same fate, or has been stored away among the old and crumpled manuscripts in some monastery or other. The story is given at length in Burmese in the အဇားဝတ္ထာရိပိဋကဓိ: (Tatthāgata Udānādipani Kyam) and for a full account and critical study of it reference may be made to this book.‡

I shall endeavour to trace the origin of Jambupati in my next paper. Meanwhile, it may be accepted with safety that the figure before us represents not Jambupati but the Bodhisattva perhaps, and doubtfully a Dhyāni-Buddha ¶ It

\* I am indebted to "C. D." also for many other suggestions which have been embodied in my Note.

† Printed at the Hanthawaddy Press, Rangoon.

‡ Vide အဇားဝတ္ထာရိပိဋကဓိ: Vol. I, p. 543 ff. "C. D." says that there is also in Talaing a story of Jambupati (B. F. L. No. 204) and also in Burmese in verse entitled အဂျိုပေါ်အုပ်စု:

¶ "The term Dhyāna (Jhāna) is a general expression for the four gradations of mystic meditation which have ethereal spaces or worlds corresponding to them, and a Dhyāni-Buddha is a Buddha who is supposed to exist as a kind of spiritual essence in these higher regions of abstract thought. That is to say, every Buddha who appears on earth in a temporal body—with the object of teaching men how to gain Nirvāna—exists also in an ideal counterpart, or ethereal representation of himself in the formless worlds of meditation. These ideal Buddhas are as

is seated cross-legged in the dhyāna-mudrā or the attitude of meditation on a lotus throne, and is holding in both hands a lotus-shaped vessel containing *Amritā*, or nectar of immortality. It is decorated with all the ornaments worn by an Indian Prince. It has head-dress, ear-ornaments, necklace, breastplate, armlets, bracelets, anklet and loin ornament, and a large shawl covers the shoulders and falls gracefully over the hand and thighs.

The history of the figure is not known. The large shawl is peculiar to the figures found in Northern India, Tibet, China and Japan, and the cape-like dress over the back and which forms a part of the shawl suggests the location of the country of origin of the figure in a cold and chilly place. The inspiration of art is Indian, but the cast of countenance suggests Mongolian influence. There is no sufficient data to fix the age of the figure, but from the style of execution it may be attributed to the late mediaeval art.

Fig : 3, Plate I. Though much inferior in execution this figure possesses all the principal ornaments and attributes of the above figure. The cult of Bodhisattva, which, according to Suzuki, was the forerunner of Mahāyānism\*, was first promulgated in Northern India, and then spread over Tibet, China, Japan and Burma, but with the stronger vitality of the Southern School of Buddhism (Hinayānism) in Burma, this cult has been buried in oblivion, and consequently figures which are the artistic representations of Bodhisattvas and Dhyāni-Buddhas have become inexplicable to a great majority of us.

It is seated cross-legged in the *vitarka-mudrā* or the attitude of argumentation† on a lotus throne holding in its left hand a vessel with *amritā*. It is attended by the quaint figures of two devotees both seated in the attitude of adoration on lotus flowers. The age and the country of origin of this figure are not known.

Figs : 1, (a) and (b) and 2<sup>10</sup>, Plate II. This quaint figure—all these figures are three different views of only one—with a decided mark of Indian influence in its facial expression represents, what is popularly known in Burma as, “Dakkhina Sākhā” or “the Southern Branch” meaning thereby that the figure represents the Buddha and is made of the wood of the Bo-tree grown in Ceylon from that Southern-branch of the Bo-tree at Gayā.

It is seated cross-legged in the *Bhumiparsamudrā* or earth touching attitude on a throne ornamented with three heads of elephant. It is holding a vessel in its proper left hand, and is flanked by two *makaras*. On the back of the throne is a Yakkha in the act of fleeing from the presence of the Buddha. Below the throne is the representation of a lake with fishes and lotus plants (fig : 2). It has on its head a sort of covering which is generally identified with lotus leaf.

numerous as the human Buddhas, but as there are only five chief human Buddhas in the present age—Kraka-cchanda, Kanaka-muni, Kasyapa, Gautama, and the future Buddha, Maitreya, so there are only five corresponding Dhyani Buddhas—Vairocana, Akshobhya, Ratnasambhava, Amitabha, and Amogha-siddha (sometimes represented in images as possessing a third eye.) But this is not all. Each of them produces, by a process of evolution, a kind of emanation from himself called a Dhyāni Bodhisattva, to act as the practical head and guardian of the Buddhist community between the death of each human Buddha and the advent of his successor. Hence there are five Bodhisattvas—Samanta-bhadra, Vajrapani, Ratnapani, Padmapani, (Avalokitesvara) and Visva-pani—corresponding to the five Dhyani-Buddhas, and the five earthly Buddhas respectively. In Nepal five corresponding female Sabetis or Tāra-devis are named.” Sir M. Monier-Williams’ “Buddhism,” pp. 202-203, and also foot-note of Mr. E. B. Havell’s “Indian Sculpture and Painting,” p. 28, cf. also pp. 194-195 of Prof: Grunwedel’s “Buddhist Art in India” edited by J. Burgess.

\* D. T. Suzuki's “Outlines of Mahayana Buddhism” pp. 8-9.

† The hanging hand with palm outward is properly in the *varamudrā*, but the thumb and index are in the *vitarka mudra*.

PLATE I.

Fig : 1



a - Front view

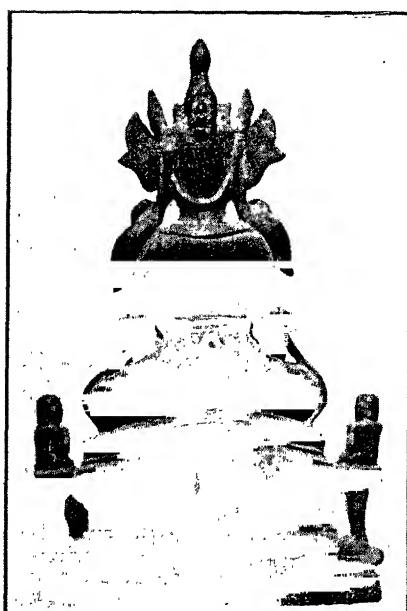


b - Back view

Fig : 2



a - Front view



b - Back view



PLATE II.



Fig : 1 - (a) Front view

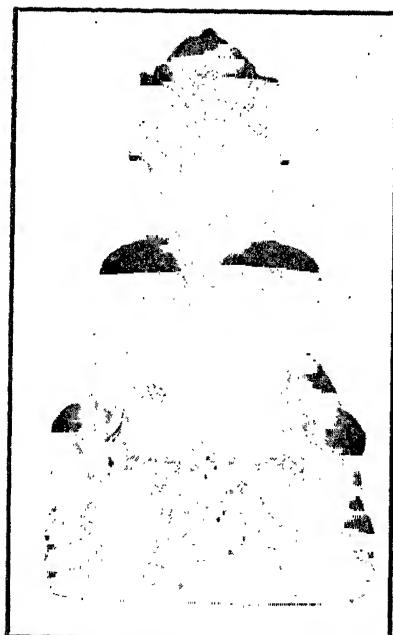


Fig : 1 - (b) Back view

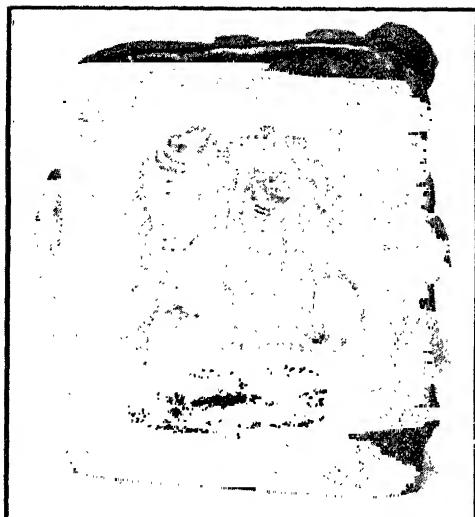


Fig : 1 - (c) View showing the under-side of the throne.

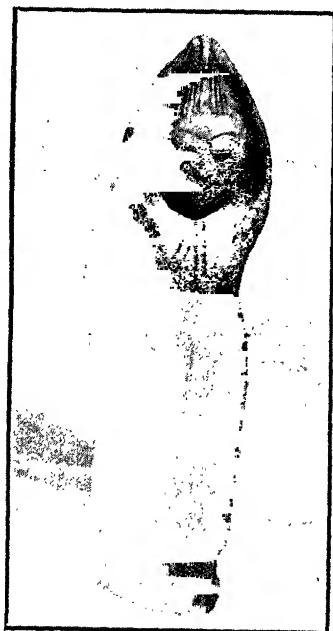
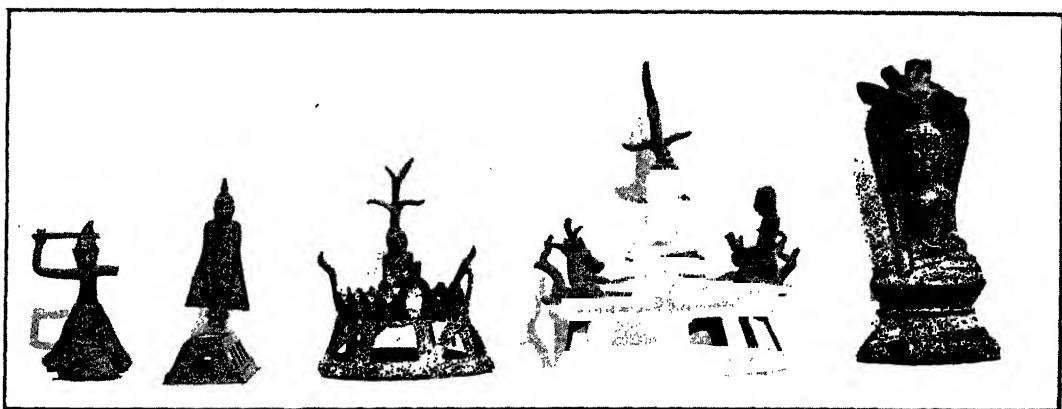


Fig : 2



a

b

c

d

e

Fig : 3



PLATE III.



Fig : 1



Fig : 2



Fig : 3



Fig : 4



Fig : 5



PLATE IV.

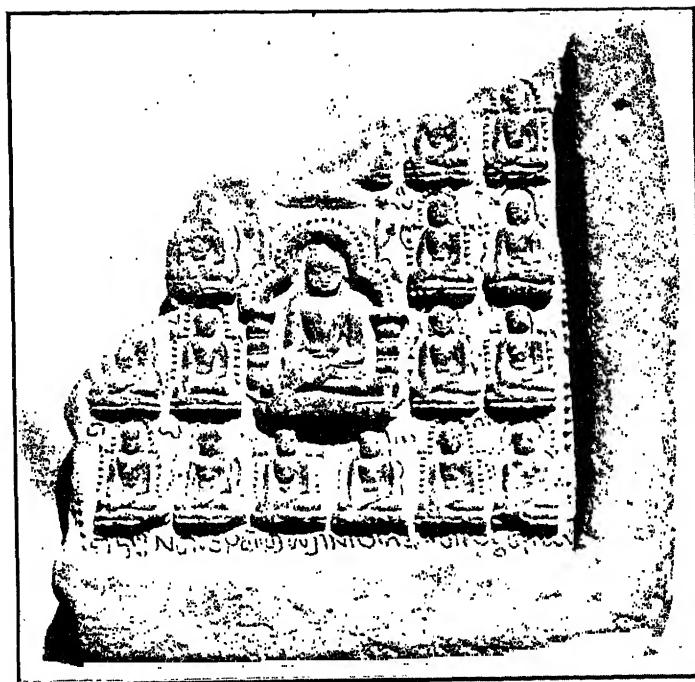


Fig : 1 (a)

ନ୍ରାମିନ୍ଦେଶ୍ୱରମିଶ୍ରମଣା

ପୂଜା

Fig : 1 (b)

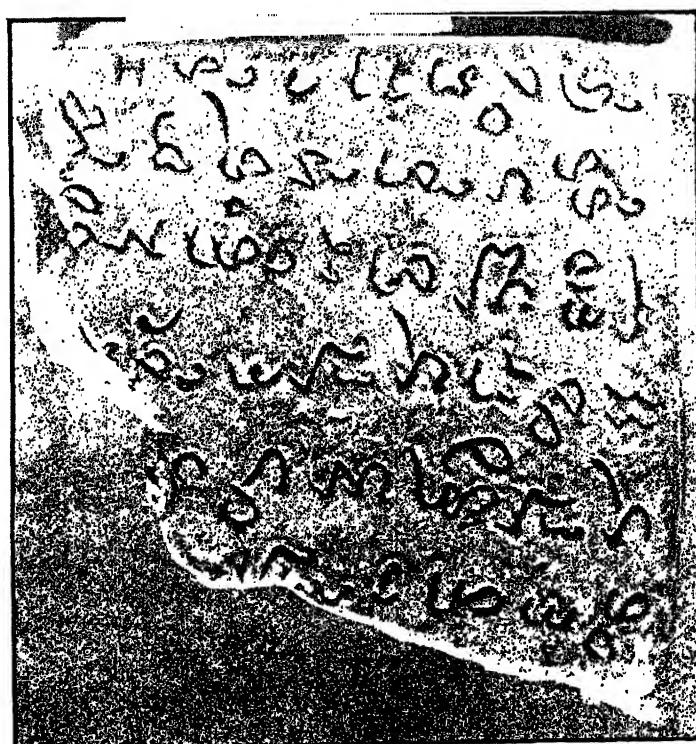


Fig : 1 (c)



In reply to a query, the Monywe Zedawun Sayadaw gave a comprehensive account of how such figures were brought over to Burma from Ceylon, and gave a history of them \*, but unfortunately no explanations were given regarding the various attributes of the figure.

It is said that a genuine Dakkhīṇā Sākhā figure is one cubit (with the fingers clinched) in height—about 1' 2½"—and has nine circular marks one on the forehead, two on the shoulders, two on the elbows, two on the sides of the posterior and two on the knees. Our figure is only about 5½" in height, and has only 7 circular marks, those on the sides of the posterior being missing. It is also doubtful if it is made of the correct material.

It forms a household figure among us and much value is attached to it. Every Burman, if he is a Buddhist and if he can afford it, has such a figure in his house. Various stories (not published) are told of its efficacy in warding off fire and in bringing in wealth, but no satisfactory explanation can be had why that venerable object is considered fire-proof and wealth-bringing. With regard to the various attributes, it is explained that persons born on Wednesday are anxious to possess the figure, and as the principal letter of each of the words ଓପ୍ତି, ମନ୍ଦିର and ଚାନ୍ଦିଳା (lotus, lake and fish) is formed of either the one or the other of the first five letters ମୁ, ଏ, ଅ, ଉ and କୁ all meaning Monday, a day which when mated with Wednesday, brings peace, wealth and long-life to the owner, such attributes are carved on the figure.

I may here point out that among the Hindu pantheon, Ganesa, the God of Wisdom, and Kuvera†, the god of wealth in one sense, are generally represented with short neck, thick-set body and protuberant belly. The Milo-Fo‡ of the Chinese also has the same features. In our figure the protuberant belly is not quite apparent, but it possesses the other features, characteristics of the above figures.

Fig: ୩, Plate II. This figure in alabaster which looks very much like that of a Burmese lady represents the *rishi* Sumedha throwing himself across the marsh for the Buddha Dipaikara to walk upon when he was visiting a certain place.

Figs : ୩, (a), (b), (c), (d) and (e) , Plate II. I have not much to add to these figures.  
4, 5, 7-9

I have arranged them in one plate for the sake of convenience.

Fig : ୪ represents Prince Siddhattha in the act of cutting off his hair. The left hand is broken near the elbow. Fig : ୫ represents the Cankamana or the Jewelled walk and figs. ୬ and ୭ represent the Buddha preaching his sermon to his first five disciples in the *Migadanavana* or deer park. In fig : ୮ there remain only the figures of the Buddha and the tree¶ and the circular pedestal around which they were arranged, and in fig : ୯ there still remain two deer and a disciple in addition to those in fig : ୮. Fig : ୧୦ represents the Mucalinda incident in which the Buddha was covered by the hood of the nāga king Mucalinda to protect him from the rain which lasted for seven days. Sets of such figures illustrating the scenes in the life of the Buddha generally form the contents of relic chambers of the Buddhist shrines in Burma§.

Fig : ୧୧, Plate III. According to the popular story that is current among us, it seems that, when Gautama was attacked, just before he attained enlightenment, by Māra and his host, he called upon Mother-earth to bear witness to the good deeds he had done in his previous lives. Thereupon, Mother-earth, Vasundari, appeared before him and wrung off her hair the water that had been poured on

\* ଲୋକଜୀବିନୀ, ପଠିବାକୁ pp. 1-20. I am indebted for this reference to Saya Pe of the Archaeological office.

† For illustration see fig. 29 of Dr. Ananda Coomarasawmy's "The Arts and Crafts of India and Ceylon," and also Plate XLIV of Mr. Havell's "Indian Sculpture and Painting."

‡ For illustration see fig. 1, facing p. 4 of J. B. R. S. Vol. I, Part II.

¶ The tree represents the deer forest or the symbol of his having obtained enlightenment.

§ See Mr. Taw Sein Ko's article on the "Ancient Relics found at Shwebo." Archaeological Survey of India, Annual Report for 1903-04, pp. 145-157.

her each time the Buddha made an offering during his previous existences. That water flowed off in five great streams and drowned Māra's host. But in the account given in the *Apadāna Atthakathā*, it is said that the Buddha merely contemplated the good deeds he had done during his last existence as King Vessantara, and the earth shook, whereby Māra's host was much frightened and fled in all directions.

The figure before us represents Vasundari in the act of wringing her hair in the light of the former story given above. It will be interesting to note that it is only in Burma such a representation of the incident has been found. From the style of the figure, its age cannot be more than a hundred years old.

Fig : 1<sup>3</sup>, Plate III. The tablet has weathered very badly, and it is difficult to make out the figures on it. The central figure seems to be the Buddha seated in European fashion and flanked by two Bodhisattvas.

Figs : 3 & 4<sup>12 & 14</sup>, Plate III. I have not much to say about these figures. The throne on which the Buddha is seated (fig : 3) may be compared with that of fig : 1, Plate II. The place of origin of these figures is not known, but from the abundance of similar votive tablets found at Pagan, I am inclined to suggest that they were brought away by the late Bishop from that place which he could not have failed to have visited while he was in Burma. Fig : 3, belongs to about the 13th—14th century A. D., and fig : 4, to about the 11th century A. D.

Fig : 1<sup>5</sup>, Plate III. It is a square plaque of baked clay representing the principal scene of the Cūlakasetṭhi Jātaka. Briefly the story runs as follows :—

Once upon a time when Brahmadatta was king of Benares, the Bodhisat was reborn as a Treasurer's son. On his coming of age he was made a Treasurer, and known as Cūlakasetṭhi (younger treasurer). One day while he was going to the king's palace he came upon a dead rat lying on the road, and noting the position of the stars at that moment, he said that any man with his wits about him might start a trade with that rat and keep a house. A young man of poor circumstances overheard what he said, and having faith in all he said, he picked up the dead rat and sold it for a farthing at a shop for a cat. With this he bought molasses and took drinking water in a water-pot. Seeing the flower-gatherers returning from the forest, he gave each a small quantity of molasses and a ladle of water. Each gave him in return a handful of flowers. He made use of the proceeds therefrom in a most ingenious and business-like manner so that in four months' time he became the possessor of 200,000 pieces. As a mark of gratitude he offered 100,000 pieces to Cūlakasetṭhi who seeing the good parts of the young man married him to his elder daughter and settled the estate on him.\*

The figure on the right of the reader represents Cūlakasetṭhi pointing at the dead rat, that on the left is the young man in the act of picking it up, and the central figure, a little above the rest, is the same young man starting trade with it. On the top is written, "Cūlasetṭhi Jāt—4."

The plaque† probably belongs, from the technique of the figures on it, to the Eastern Petleik Pagoda, Pagan, (10th—11th century A. D.). It may not be out of place here to mention that the plaque bearing the same legend and number is missing from the above pagoda.

Fig : <sup>a, b & c</sup><sub>15</sub>, Plate IV. "C. D." writes, "A fragment of a votive brick, broken diagonally, 5" × 4 $\frac{1}{2}$ ". The brick has a recess or niche  $\frac{1}{2}$  inch deep, in which is represented, seated on a throne in the bhūmiparça-mudrā, the last Buddha Sakyamuni, with around him, the Buddhas that preceded him, of whom 15 are visible ; there are letters between the heads of the small Buddhas, and a line of inscription at the bottom. On the reverse another inscription in archaic

\* Fausböll's Jataka, Vol. I, pp. 114-123, and Professor E. B. Cowell's edition of the Jātakas (translation), Vol. I, pp. 14—20.

† Cf. the figures in Mr. Taw Sein Ko's article on "The Plaques found at the Petleik Pagoda, Pagan," Archæological Survey of India, Annual Report, pp., 127—136.

characters, in Pali, about half of which is missing." I have nothing more to add to the above descriptions but there are three inscriptions to be dealt with :—

- (1) The letters between the heads of the Buddhas ;
  - (2) The line of inscription at the bottom ; and
  - (3) Another inscription in archaic characters on the reverse

The letters between the heads of the Buddhas are very indistinct. I read a few here and there, but could make nothing out of them. The letters on a similar tablet found at Pagan appear to be more distinct, and Mr. Robert Sewell in his "Antiquarian Notes in Burma and Ceylon" writes as follows :—

"Aksharas will be observed close to the heads of the different Buddha figures, in the right side of each. These are probably the initials of their names & Ti for Tissa, or Tishya, & Ka for Kakusandha, Kassapa, or another ; and so on"\*

The line of inscription below the figures of the Buddha is in Pali, in Burmese characters of about the 11th—13th century A. D. As the letters are very small in the photograph, and as it is difficult to take an impression of them, I give in fig : b, Plate IV, an eye copy of them. I read the inscription as follows :—

“အားလုံးသတိမေ့ချွဲ၍ဖြေယူဆောင်ရွက်တာမှုပ္ပါယာ”†

"Athāvīsatī" me Buddhā triyyā Sambengena † Katā Buddhatthāya."

"These twenty eight (figures of the) Buddhas who have crossed over to Nirvāna were made by Sambeng (a minister) in order to obtain enlightenment."

The inscription on the reverse face is only a fragment, about two lines on the top, a few words in those that remain being missing. I give below a transcription and translation of it.

### *Transcription.*

- 1— .....  
 2— .....  
 3—ti katā rañño .....  
 4—puññatthāya'pi .....  
 5—imināpuñña kammena .....  
 6—dukkhappyamānato sabba [sa]  
 7—tte pamocetum Buddh [o]  
 8—homi anāgate.

### *Translation.*

- 1—.....  
2—.....  
3—made ..... king ..  
4—for the purpose of obtaining merit.

\* Indian Antiquary, Vol : XXXV, p. 295.

<sup>†</sup> Indian Antiquary, Vol : XXXV, pp., 294-295. It is read "Athavisati, me Buddha trayya sameta Kāta Buddhatthaya."

In another inscription a photograph of which I have in my possession it is written သင်ပတ္တန (Sambendana pati). Cf. also I. 2, pp., 266-267, Inscriptions collected in Upper Burma.

5—8—May I by (virtue of) this meritorious deed become Buddha in due course of time in order that the whole world may be liberated from the boundless sorrow (attending rebirths).

A great deal of interest centres round the purport of lines 5—8 of the above inscription. The aim and object of the donor is not simply to obtain merit that may ferry him, and him alone, across to Nirvāna, neither for the sake only of obtaining enlightenment and then fly away from the triple world, but for the sake of obtaining enlightenment for the weal and happiness of the world at large, for the sake of the complete Nirvāna of all beings. This universal love for all beings is one of the peculiar features of Mahāyānism. D. T. Suzuki says, "Hinayānism confines itself to the salvation of individuals only ; it does not extend its bliss universally, as each person must achieve his own deliverance. Mahāyānism, on the other hand, aims at general salvation ; it endeavours to save us not only individually, but universally. All the motives, efforts, and actions of the Bodhisattvas pivot on the furtherance of universal welfare"\*\*

This votive tablet is also interesting from the artistic point of view. It is thought by some Indianists that all the votive tablets found in Burma were brought over by pilgrims visiting India. It is not probable, but the abundance of such tablets found in Burma, and the inscriptions in Burmese characters which some of them bear are decided proofs that some at least were made in Burma. Of course the art of making them was imported from India.

MAUNG MYA,  
*Burma Archaeological Survey.*

### WHY BURMA IS SPARSELY POPULATED A SUGGESTION.

In reading over the April number of this Journal (Vol. IV, Part I), my eyes ran over an interesting article "Why Burma is sparsely populated." The writer of that article has not found out any satisfactory explanation, though his article makes one believe that he has solved it, but on the contrary he has asked if any one can suggest a reason. I need not recapitulate here what the learned writer has said before, except state briefly the discussion that followed when his paper was read. U May Oung seemed to be nearer the mark, in my humble opinion, when he said that "Mr. Stuart's suggestion that Buddhism discouraged population would not explain another mystery—the scant population of North America before the English arrived. .... Personally he himself did not think along the waterways, where life was easy, the population in Burma had been less than that of other countries. ...."

In his valuable paper Mr. Stuart has left nothing unsaid, he has thoroughly discussed the pros and cons that the article could admit of, and I think in suggesting it I am like the proverbial man who holds a farthing candle to the sun. The one reason why Burma is sparsely populated is that there is no strong desire for numerous progeny amongst the Burmans. The second reason is that the average Burman is not as lustful (I hope my readers will pardon me for using this word) as his brother the Jew, or any other person of any nation. The third reason is that

\* D. T. Suzuki's "Outlines of Mahayana Buddhism," p. 63.

Burma is quite a modern country. She has just been born, and cannot in any way be compared with any other province. India and China seem to me to be incomparable with Burma. Both countries are far ahead of Burma in every respect. India and China have reached their zenith of civilisation when Gotama Buddha preached his noble Truth. Burma then was inhabited by wild tribes of men who were scarcely better than beasts. Perhaps those tribes may or may not be Burmans.\* Then during the times of Burmese Kings, it is a well-known fact that each king had 4 to 500 wives. Then each prince married as many wives as he wanted. Then with bad government, ignorance of the knowledge of midwifery, ignorance of sanitary laws, etc., it does not at all seem that the population would grow by leaps and bounds. In fact it would lessen the population. Withal these the Burmese people grew up into a nation. That the Burmese were at first savages who lived in tribes and clans is a settled fact. Lord Avebury in his famous work. "*The Origin of Civilisation and the Primitive Condition of Man*" says on "*The Origin of Marriage*":—"Indeed it is now admitted by most of those who have studied the subject that there was a time when individual marriage did not exist, and when mankind lived in a state of what I have suggested we might call communal marriage."

When the English were living in more settled form of living and civilisation and when they have progressed much in the institution of individual form of marriageship, and when they were threatening King John for the Magna Charta, the peoples of Burma were then living under communal marriage forms. Burma, therefore, is much behind England in matter of population.

Even now there are wild tribes in the neighbouring mountains which take up a large area of the country. The Burmese are not very far ahead of their kinsmen the hill-tribes, in matter of population. Marriage by capture which is the most characteristic of savage manners and customs still clings to modern Burmese marriage customs ; e. g., the stone throwing or ဗျား commonly called, the custom of hooding the bride's face, and the taking away of the bridegroom by his friends after the marriage ceremony. The curious custom which forbids the father-in-law and the mother-in-law speaking to their son-in-law and *vice versa* seems to be a natural consequence of marriage by capture and is part and parcel of Burmese customs and goes far to prove that it has evolved out of exogamy and that numerous progeny could not have resulted.

Then the other reason is the Burmese woman is a hard labourer and faces her work as boldly as her partner the Burman.

Lastly it does not seem to me that there are large tracts of fertile plains in Burma which are conducive to the growth of families as in India and China.

Under these circumstances, it is but natural that Burma should remain sparsely populated.

MAUNG BA AUNG.

#### TWO LEGENDARY HEROES OF THE MONS.

##### 1. ATTHA, THE CATTLE-HERD.

This story tells how by the evil plotting of his uncle a Prince became a Cattle herd and how by his own bravery, and by the faith his mother had in him the Cattle herd become a Prince. It is told briefly in the Mon Chronicles, but you

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\* For further details, please see my article "The Origin of the Burmese" published in the April number of the "Indian Review" published by Messrs. G. A. Natesan & Co., of Madras.

will find it more fully in the play books sold in the bazaars, and not long ago one version of the story was acted by Aung Bala. It is a story which should be read in all the schools.

A very long time ago Hanthawaddy, the City of the Golden Hintha, was still beneath the sea. From Rangoon to Moulmein almost the whole way the sea is thick with mud, soil brought down by the Irrawaddy and its tributaries from all the valleys as far as the frontier of China and beyond. The freshets from the side hills build up little cup shaped lakes into which the main waters of the river cannot enter, so all the fertilising soil is carried out to sea and sinks to the bottom, gradually building up a barrier. Meanwhile the whole surface has been rising and the mud settled at the bottom has been raised above the sea. In the days of Attha there was no level land but the hills of Syriam with its old pagoda, Twante and Rangoon stood out from the sea as a tree clad archipelago. The Mons had not yet come into the country and the Burmans were still away in the north of what is now Upper Burma, but there were colonists from India from the country of Orissa who had settled on the hills at the mouth of the Irrawaddy, to carry on their trade with China. The city of Hanthawaddy, Pegu as it is now called, had only recently emerged from out the sea and the Indians seem to have established a colony there. The Mons at that time occupied the eastern hills, but were driven westward by the rising power of Cambodia. The Mon capital was at Thaton but the princes, Thamala and Wimala, led them to the west and, driving out the Indians, settled in Hanthawaddy. Thamala was the first king. He married a princess known as the Queen of the Golden Gourd, and after reigning ten years died leaving an only son, a baby. This was Attha. Thamala was succeeded by Wimala, his brother, who was afraid that when the baby was grown up he would try to seize the throne, and ordered that he should be destroyed.

The Queen of the Golden Gourd was afraid to disobey the orders of the king, who had now become her husband, marrying his brother's widow at the time that he took his kingdom, but she did not want to lose her child. So she placed him in the care of an old woman called Mi Nangalon who lived in a distant village on the borders of the kingdom. Kun Attha was the name of the village and according to the history book it was so called because this is a Tala-ing phrase meaning 'the last village.' Mi Nangalon did not know that the baby was a prince, the son of Thamala. She was very old and had no children of her own, so she looked after him and brought him up as if he had been her own son. She had a large herd of buffaloes, and when the boy grew old enough he would take them out daily grazing in the forest. So he grew up among the buffaloes, riding astride one as they went out each morning to the grazing ground and as they came home each evening. There were no other children there for him to play with, he lived alone with his foster mother in the remotest corner of the kingdom. So the buffaloes learned his voice and he learned to call them all by name, and gradually, for lack of other boys to talk to, he learned the language of the buffaloes. And as he went about the jungle he learned that all the other animals were equally his brethren and learned to talk with them. He would run races with the sambhur deer and wrestle with the tiger cubs, so that he grew up very strong and swift footed, and he learned cunning from the jungle cat and wisdom from the owl. While he was still a baby the animals had to play gently with him for fear lest they should hurt him, but by the time that he was twelve years old he could run faster than a four year deer, could dodge a tiger as it sprang at him and even one of his own buffaloes knew whether he was beating it in play or earnest. He was king in the forest as he had been born king over all the country.

Once in every year his mother, the Queen, sent messengers for news of him. They would come to the village in the guise of travellers from a distant country and talk to the boy without his knowing who they were. And each year when the messengers came back and told his mother that he was straight and upstanding, one who would be a strong support to all his friends and whom all his

enemies would fear, she was both glad and sorry ; glad because her son was such as they reported, sorry because she could not see him with her own eyes. But she resolved that some day he should meet his uncle, Wimala, that they should be reconciled, and that her son should sit upon the throne when he became a man. Year in, year out she sought a means by which this might be rendered possible, but for all her pondering she could devise no plan.

At length there was an opportunity. The Indians whom Thamala had driven out, came back with a great army, and attempted to re-take the kingdom. For a long time it looked as if they would succeed. Their leader was a man named Lamba, a giant, head and shoulders above all his followers in the army. There were many battles fought, and time and again the Talaings were beaten. At length Wimala sent round heralds proclaiming great rewards to anyone who should come forward and prove successful in killing Lamba and driving out the Indians. Man after man appeared but the giant was very strong and a great warrior and they all failed. Then the queen thought of her son. She had treasured up the stories of his prowess and bravery, how he could out run the deer, and single handed overcome the tiger. He was still only a boy, not yet sixteen, but it was a chance worth trying. So she sent for him and revealed herself as his mother, telling him that he was a Prince by birth and rightful successor to the throne and showed him how the kingdom was troubled by this giant and in danger of again passing to the Indians whom his father Thamala had overcome. The boy was brave as he was strong, and gladly offered himself as champion of the kingdom. Then he went to Wimala and without making known his true estate asked for permission to fight against the giant.

'What can this boy do', laughed Wimala, 'where so many grown up men and champions have failed?'.

But the boy arming himself with his father's spear, which his mother gave him, went out to fight with Lamba. One on each side, picked champions, they were to fight while the armies watched them. So Lamba came out from the army, dancing and singing and tossing his battle axe high into the air, catching it as it fell and brandishing it against the small boy who stood out silent and all alone in front of the army watching the onset of the giant. At length they came within speaking distance and the giant lauged at the boy telling him to go back and mind his buffaloes : 'It is my trade' he boasted 'to kill full armed warriors, I do not wish to butcher little cattle herds'. But the boy had learned cunning from the jungle cat : 'Why then,' he asked, 'why then, having said that you would come alone, do you bring a company of men behind you?'

Lamba turned round to look, and swift as the spring of a tiger the boy jumped at him, thrusting the spear beneath his armpit so that the head came out six inches clear on the further side. Lamba fell back dead, and the Indian army, terrified at the fall of their leader, broke and fled, while the Mons chased them to their ship, killing so many that no Indian army has ever ventured to return.

Then Wimala came out to meet the boy, telling him to ask for his reward. But the boy kept silent while his mother told the story of his life, how he had been the infant son of Thamala, whom Wimala had ordered to be killed. Wimala became very much afraid fearing lest the boy should kill him as he had killed the giant. But the boy was not yet of an age to rule and he confirmed the uncle on his throne until he died.

And after the death of Wimala, the boy succeeded to the throne, as the third King of Hanthawaddy, taking Attha as his name after the village where he had spent his childhood as a cattle herd. And during his reign the land had peace and religion was established.

## 2. BHADRADEVI, THE MERCHANT'S DAUGHTER.

" And the name of that Queen, Bhadraevi, is famous up to the present day." That is how the story finishes and there is no doubt that her name deserves to be remembered. Probably, although I have never come across them there are still playbooks which commemorate her, and under the name of Ta-pu-nга she is mentioned in some of the chronicles that are readily accessible, but the only account known to me which tells of her at length is that given in the scholarly translation by Professor Schmidt of the Talaing Chronicle from that language into German. Together with Attha, the Cattle Herd, and the Golden Company of Aung Zeya, who led the last assault on Syriam, and the general who under the style of Lord of the Setting Sun led the forlorn hope in 1856 she deserves a place in every school reading book whether it is written in English or Burmese.

She was the daughter of a merchant who lived in the reign of Teiktha Raza, the seventh King of Hanthawaddy of the line of Thamala. All the preceding kings had revered religion, honoured the Three Precious Things, the Buddha, the Law and the Assembly, erected pagodas, founded monasteries, and set up memorials fashioned in the likeness of the Buddha. But Teiktha Raza, says the history was a follower of Dewadat : he did not honour the Buddha, nor accept the Law, nor pay respect to the Assembly. He cast down all the memorials of the Buddha, burying them in the ground, or throwing them into the waters and marshy places. He prohibited the public practice of religion, so that no one could go to the pagoda to observe their duties, nor could the monks administer the commandments to the people. But he could not order the hearts of his subjects and some of them in private still maintained religious practices.

Among these were a certain merchant and his family. He had only one daughter, then known as Ta-pu-nга, whom from the age of ten years he had instructed in the consolations of religion. At that time the King had not yet decreed that no one should go to the pagodas, and regularly on holy days her parents had taken her to the monastery, where she had been accustomed to hear the monks' recite the Law and had learned to welcome the truths of the Three Precious Things. It was not until she had finished the first period of life and was just fully grown that the King issued his decrees against religion.

Shortly after the new laws had been promulgated she went out with an old slave woman to the bathing pool, and while bathing her foot struck against something hard. Putting down her hand she felt that it was a figure carved in stone, so calling for help from her attendant they dragged it out on to the bank. It was a heavy task, but with hard work they succeeded in landing it before the sun had reached its highest. It was a statue of the Buddha all covered with gold and glistening in the sunlight so that their eyes were dazzled.

'Who is so daring', she asked the old attendant, 'as to have overthrown this statue of the Master?'

'Ah! lady', the old woman answered her respectfully, 'it is this blasphemous (deitti) King, who follows the word of an unfaithful teacher, over the whole country he has overthrown the memorials of religion, and should anyone pay honour to the Buddha at the pagoda it is ordered that he shall be put to death and utterly made away with'. On this wise replied the old attendant.

'I live according to the Three Precious Things', answered the maiden, 'and I do not seek to avoid death. Come let us wash the statue and we will once more place it in the Temple.' Then together they washed it and set it in the Temple. Before long the King heard that the merchant's daughter had disobeyed his orders and sent royal messengers that she should be called before him. The messengers found her cleaning and replacing other statues that had been thrown down.

'Let me remain here for a while' she said.

So the messengers went back and told the King that she was cleansing and replacing all the statues. Once again the King gave orders that she should be

brought to him. By this time she had set up all the statues in a circle as they had been at first. She had done her work and was ready to face the King. She told the King boldly what she had done, and in great anger he commanded 'Bring her to the elephants that they may trample her to death'. Outside the palace ground there was a herd of half wild elephants, not long captured. Whenever the doors of the elephant pit were opened and anyone thrust in they would trumpet loudly, and with angry eyes and waving trunks rush forward to trample them to pieces. The King who was a heretic, a destroyer of religion, would sit looking on with his crowd of courtiers and laugh. They brought her to the elephants but the maiden allowed compassion (*myitti*) to work on the King and the elephants and the drivers of the elephants, and she called out in a loud voice.

"I take refuge in the Buddha."

"I take refuge in the Law"

"I take refuge in the Assembly."

The elephants hearing this trumpeted loudly in praise of the Three Precious Things and of the girl and refused to go forward and trample on her. The drivers also felt compassion, but they were afraid that if they did not obey orders they themselves would be destroyed, so they urged forward their mounts. But for all their urging the elephants only trumpeted their praise more loudly.

At this the King became exceedingly angry, and ordered that she should be wrapped round with straw and cast into a fiery furnace. But again she let compassion work on those who were charged to throw her in, repeating to them the words of comfort. And they were afraid to burn her and went back to the King reporting that just as the elephants had refused to tread on her so did the flames refuse to burn her. Then the King waxed still more wroth and had the maiden brought before him bound, a prisoner. 'If,' he said, 'I see a statue of your Master fly up into the sky, then you may live but if of seven statues there is not produced an eighth then I will certainly cut you into seven pieces.'

Then the maiden by prayer acquired dominion over matter and, where seven statues stood in the circle as she had replaced them, eight flew up into the air and went to the place of the King. And the King commanded that his heretic teachers should perform a like miracle, but they could not accomplish it. So recognising the power of true religion the King became a thankful and pious follower of the Master, he set up pagodas to mark the sites of all these miracles, turned the heretics out of his kingdom and raised the maiden to the position of chief queen. And the name of that Queen, Bhadradevi, is famous up to the present day.

J. S. F.

#### THIEVES' NIGHT AT MANDALAY.

There is an old custom at Mandalay, now dying out but in full force a few years ago, which is of some interest to anthropologists and has not, so far as I know, hitherto been described. On the night of the full moon of Tazaungmon, which usually falls in November, every one has full license to steal what he pleases from his neighbour's house and remove it to a distance, the only conditions being that it should be taken without the owner's knowledge and placed where it is possible for him to recover it, if he chooses to search far enough. Long after the annexation of Upper Burma, on the morning after the full moon, some of the main roads in the city were to be seen almost completely blocked with vast piles of furniture and belongings of all kinds, surreptitiously removed from more or less distant houses. The bigger the object, of course, the greater the skill shown, the more trouble to the owners, and therefore the greater fun. Wooden platforms, used either as bedsteads or for sitting on during the day, were

often selected, and those, piled on the top of one another, made at least a good base for other articles, which included cooking-pots and large jars for storing water (beautiful dummy figures could be made out of these and a few articles of clothing, also surreptitiously removed), such tables and chairs as were in use, and even staircases. On one occasion, indeed, the removal of a staircase resulted in a somewhat serious accident. The owner of the house, walking out of a door in the upper story before dawn, when he was perhaps not fully awake, stepped into space, and was found below with a broken leg. Although part of the game was never to let it be known who removed the things, the owner having to find them for himself, in this case the "thief" came forward, and supported the man's family while he was unable to work.

Not the least interesting result of the custom is the light it throws on the character of the Burmans of Mandalay. It would be impossible in a community that is not, on the whole, honest, and above all extraordinarily good-tempered. To have to go out and search for one's household goods in a dozen different directions before sitting down to a meal would be trying to anyone's temper, and the Burmese are generally supposed to be a passionate race. One would think, also, that thieves would make use of the custom to steal the things put out on the roads, or to commit real thefts on pretence of merely joining in the game; but I am assured that they do, or at least did, nothing of the kind. It is a point of honour for the persons who remove the goods to keep an eye on them until they are found by the owners, and if they do by any chance disappear they make good their value.

The custom seems to be comparatively little known outside Mandalay, the royal city. Another form of it, however, appears to have once been general in Upper Burma by which every one had the right, on this night of the year, to help himself surreptitiously to growing fruit, and to eat it at leisure. It was also usual for young men and girls to throw fruit at each other and at the houses of their elders; the *Zibyu*, an inferior kind of plum, being especially used in this way.

It may be that the Mandalay custom is merely a town development of the other. At all events the license to help oneself to fruit, and the use of fruit as a missile, in a kind of carnival suggest many parallels in other countries, and seem to be a survival of rites intended to promote fertility; while the orgy of practical joking which the Mandalay people indulge in is more difficult to explain. It may be that a mirth-loving people, finding themselves in a town with no growing fruit, substituted for the license to remove and eat it a license to play practical jokes on those among them who had more property than they ought to have. There appears to be no trace of a patron saint of thieves, in whose honour the people might have devoted themselves to a pretence of thieving for one night in the year; not, of course, in order to promote theft, but with a view to protecting their own property by propitiating the god.

R. GRANT BROWN.

## PHILOLOGICAL NOTES

### IV.—BURMESE PHILOLOGY AND THE SHAN LANGUAGE.

In the Journal of the Burma Research Society, June 1913, there is an article by Prof. C. Duroiselle on *Burmese Philology* which quotes with approval Mr. J. A. Stewart's rule:

"Groups of words whose main differentia is tone are seen to have a close similarity of meaning";

and then the Professor gives another;

"Words which are closely related in meaning have the same inherent vowel sound".

I was curious enough to look into the matter to see whether either or both of those rules would apply, in any large measure, to the Shan language. Of course I did not pick out words of the same *tone*, or words of the same *vowel sound*, and then see about their meanings, but, taking a large number of words of radically the same meaning, I tried to reduce them to either the one or the other of the rules given. The results are far from satisfactory—the exceptions seem to pervert rather than prove the rules, so far as the Shan language is concerned. I went through all the groups of words given on pages 15 and 16, 26 groups in all, but I need give here only a few of them to show how the rules worked. What is true of these few is also true of them all. The first group, as given by Prof. Duroiselle, contains words meaning to enter, being entered, etc. For the Shan we have: သင်, သနိ, သရိ, စံ၊ ထံ, ထိ, မှော်, ထိ, သိ, ဘုတ်, မှော်, သွင်,

It may be seen at a glance that these words may be grouped round several tones or vowel sounds but not round only one of either. In fact, nearly all of the tones, and one-half of the vowel sounds in the whole language are represented here.

Let us try the second group, of words meaning to press, to squeeze, etc., to see if we may be more fortunate: ଧର୍ଦ୍ଦ, ପଣ୍ଡ, ମୁଣ୍ଡ, ତର୍ଦ୍ଦ, ହିର୍ଦ୍ଦ, ଧିର୍ଦ୍ଦ, କନ୍ଦ, ଯିନ୍ଦ, ଅଧିନ୍ଦ, ତ୍ରିତର୍ଦ୍ଦ, ଶୁନ୍ଦ.

Here there is a little less variety in the vowel sounds, but the same variety in tonal inflection and in initial consonants.

Here, again, it would be impossible to reduce these words to any one tonal inflection or to any one vowel sound ; there must have been many "root-words".

Here there is the same variety in tonal inflection, but perhaps a little less in vowel sounds and in initial consonants.

The number of "root-words" may be considerably less than the total number given here, and it is possible that either or both of the rules might be applied to the Shan language to some advantage, but let us hope that some better rules may be found.

In a foot note, on page 13, Prof. Duroiselle makes the surprising statement: "Chinese is said to have about 500 root-words at most". I am not a Chinese scholar, but I doubt the accuracy of that statement. It is exceedingly difficult to believe that a language like the Chinese, which has borrowed from various surrounding barbarian races and tribes, in its process—four thousand years long—of imposing Chinese culture upon them and then in assimilating them, contains only about 500 root-words. The Chinese must have assimilated more words than that from Mongol-Tatars, Lao-Shans, Mon-Khmers, Tibeto-Burmans, Tunguses and Turks. Let alone her original stock of pure Chinese words (whatever they may have been).

That the Chinese written language may be reduced to 500 root-symbols is believable; just as the Shan written language may be reduced to a limited number of consonant and vowel combinations. But these monosyllables, though they look just alike on the written page, are pronounced in various ways and have a multitude of distinct radical meanings.

A similar thing may be said of Burmese : Take that first rule.

"Groups of words whose main differentia is tone are seen to have a close similarity of meaning". But there are only three or four tones in Burmese, as now spoken ; while there must be as many thousand of words in common use, a thousand, on an average, for each tone. This must vitiate, to some degree, the value of that rule, for philological purposes, even in Burmese. The same thing holds good, to a slightly less degree, of the vowel-sound theory. The only rule that I can, at present, discover for the Shan language is the rule of endless variety.

NOTE :—Many of the Shan words were taken from Dr. Cushing's Dictionary, a few came from my own unpublished lists.

W. W. COCHRANE.

#### REMARKS ON MR. COCHRANE'S NOTE.

This note of Mr. Cochrane is interesting in that it shows that the phenomena pointed out by Mr. J. A. Stewart and myself\* and to which he refers, do not apply to the Shan language. This is a point acquired to Indo-Chinese philology. But from this to imply that two rules, which fit exactly Burmese because evolved from the structure of the language itself, are no good because they do not likewise exactly apply to Shan also, is somewhat off the mark. It was certainly not to be expected that these two rules would find equally satisfactory application in absolutely *all* the Indo-Chinese tongues, which include several families of languages ; but it was hoped they might apply, either *in toto* or in part, to a large number of them, and principally to dialects of the Tibeto-Burman family. That this hope might reasonably be realized is shown by the rule set down by myself, that "words which are closely related in meaning have the same inherent vowel sound", applies equally to Talaing, which belongs to the Mon-Khmer family, its application is not so wide in this language as in Burmese, but is still sufficiently striking to establish the rule on a somewhat firmer basis. I hope to publish a short list of examples in a future number of the Journal.

Mr. Cochrane wonders at my statement that "Chinese is said to have about 500 root-words at most". I do not think any one would make such a statement at random ; I could not remember where I had seen this stated in black and white, and not being myself in the least a Chinese scholar, I wrote to Mr. Taw Sein Ko, our distinguished sinologist, for his opinion. His answer is here appended, which shews I did not err widely.

CHAS. DUROISELLE.

DEAR MR. DUROISELLE,

Your letter of 5th instant. The Encyclopædia Britannica (Volume V, page 655) says :

"The number of the primitives (or root-words) has been variously estimated. Dr. Marshman gives them at 3867, Callery at about 1000, and later writers have reckoned them to be from 1100 to 1200. Taking them even at the lowest of these figures, it will readily be imagined how, by combining with the 214 determinatives, they may be made to form the thirty and odd thousand distinct characters of the language, since, of course, it would be possible by combining each of the 1000 primitives with every one of the 214 determinatives, to form more than seven times that number of characters" In other words, there

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\* See J. B. R. S. Vol. II, part II, page 168, and Volume III, part I, page 12.

are over 30,000 characters or written symbols in the Chinese language. They are formed by a process known, in Algebra, as Permutation and Combination, i.e., to say, by placing the 1000 primitives in juxtaposition with the 214 determinatives.

Williams (Middle Kingdom, Volume 1, page 611) says: "In Morrison's Dictionary the number of separate words in the court dialect is 411, but if the aspirated syllables be distinguished there are 533. In the author's "Syllabic Dictionary" the number is 532; Wade reduces the Peking dialect to 397 syllables in one list, and increases it to 420 in another. In the Cantonese there are 707; in the dialect of Swatow, 674; at Amoy, about 900; at Fuhchau, 928; and 660 at Shanghai. All these lists distinguish between aspirated and unaspirated words".

There are many dialects spoken in China. At one time in the dim past, each dialect formed an independent tongue. The number of separate words used in the Court dialect spoken at Peking, which is called Pekinese Mandarin, may be roughly set down at 500. By the help of tones, which are four in number, the number of words is raised considerably. In the Amoy and Fuhchau dialects, there are about 900 and 928 separate words respectively, and each of these dialects has more than 4 tones.

It may be taken for granted that the number of separate or independent words in the Chinese language ranges from 500 to 1000, and that by the help of tones and the 214 determinatives, the number is raised to over 30,000.

Yours Sincerely,

TAW SEIN KO.

*Mandalay, 6th February 1914.*

## V—REPLIES TO MR. COOPER'S

### NOTE ON TALAING NISSAYAS AND VOCABULARY.

*Mandalay, 8th January 1915.*

MY DEAR MAUNG TIN,

On first reading Mr. W. G. Cooper's "A note on Talaing Nissayas and Vocabulary" in the last number of the Journal, Vol. IV, part ii, in which he criticises my "Talaing Nissayas", I was so struck by the evident lack of literary criticism, the errors into which he himself falls, and the way in which he applies the lashes, that I did not think it necessary to answer his Note. These defects are so self-evident that, in my opinion, they precluded the necessity of any reply. But several friends of mine, well acquainted with Talaing, have thought otherwise, and in deference to their wishes I now intend answering Mr. Cooper. As you have given me to understand, however, that it is now too late for any contribution finding a place in the forthcoming number of the Journal, I shall send you my reply for insertion in a future issue. I need scarcely tell you it shall be written in a friendly spirit of literary criticism. I am aware of the defect of my "Nissayas", and I take this opportunity to thank sincerely Mr. Cooper for a number of errors which he has pointed out.

I am sending you, for favour of insertion in this number, two short letters addressed to me, one by the well-known Talaing scholar, Revd. R. Halliday; the other, by Mr. C. O. Blagden, so well known in connection with Pyu and Talaing. Both of them are instructive, throwing some side-light on Mon Philology and transliteration. Anything that falls from the pen of these two mature Talaing scholars is too valuable to be stored away within the covers of a private file.

Yours Sincerely,

CHAS. DUROISELLE.

## DEAR MR. DUROISELLE,

I have read Mr. Cooper's notes criticising your paper on the Talaing Nissayas. Whilst he shows a surprising knowledge for so new a student he is far from being expert enough either to set you right on all points or to question the Pali scholarship of the old Talaing writers as he seems to do. I am confident that you will be quite able to defend your own positions from Mr. Cooper's attacks unless where he has actually put you in the wrong. I could almost wish to write something in defence of the old writers. That Mr. Cooper's knowledge of either colloquial or literary Talaing has its limitations could easily be proved from his paper.

As to your system of transliteration the advantages of which Mr. Cooper does not seem to appreciate, I think you will have seen that I am quite in agreement with you in the main. I know no other way of accurately representing Talaing for the purposes we have in view. It is not as if we were seeking to teach the spoken language. Mr. Cooper's method in many cases represents mere provincialisms. There is really no standard Talaing pronunciation unless we adopt the Pegu dialect and Mr. Cooper does not represent that. The word တိဝါ for example is pronounced variously *tit*, *tet* and even something like *tait..* တိ is *ti*, *tai*, *toi*, etc. ပုတ် may be *put*, *pawt*, *paut* or *pait* as occasion requires. The first in each case is the Pegu form. Talaing prosody too recognises no change in the sound of the same vowel symbol no matter how it is placed. ခါ and ခု rhyme with အာ though the vowel is spoken differently.

I should be in favour, however, of representing the anusvara by h and a' where it is a convenience for ထိ and ဆိ. Where it occurs before a final consonant I should like to see it represented by a vowel simply, perhaps O with a mark over it. I have been using Mr. Blagden's ui for ထိ though it would be preferable to have a single symbol there too. I use w for ဆိ.

I notice that Mr. Cooper takes exception to your derivation of အထားမာတ် also found as ထားမာတ်. It is not only composed of two words, but the two words are used separately, both in the spoken language and in the books. Here is a passage from Maṅgaladipani in which the words occur in consecutive sentences. မာတ်ညေးဂူးလိုင်ထိတန္ဒိတန္ဒိရှိပါ။ အစာငွေလိအာတုသုသိရွှေအဓာန်။ ထားမာတ်ကျိုးမြှေးမြှေး။ အစာငွေလိတိတော်တွေးရောင်ညေး။

"When the teacher had been informed many times by different people, he believed their tales and thus considered. If I put him to death, then people will say that the teacher kills his pupils."

I have not met with ဗျား for ဖား. It can only be an attempt to represent a provincial pronunciation.

ခုတ်ပြုလိ represents *vakkam* the kidneys.

I wonder if ဇော် should not be မတ်ဇော်။ In the Pali Mon Dictionary *anjanam* is given as မတ်ဇော်=မတ်ဇော်ဝဲလှယ်မတ်။ The latter, I think, is the form used in the *skem*. I have found မတ်ဇော် for a collyrium, but that may have been either a mere mistake or the first part has been suggested by the word for the eyes. It is interesting to note that the Burmese has မျက်စီး applied to an eye-salve for cattle. I think it quite likely to be connected with the Talaing word.

Mr. Cooper is quite wrong in connecting ဆူမလော် with the ကျွဲယဝံ. It is not the name of a tree at all, but of a spirit-haunted tree. I have found a list of four kinds of မလော် in the Maṅgaladīpanī, မလာဝိပြု၏၊ မလာဝိတ္ထု၏၊ မလာဝိဖြင့်၏၊ မလာဝိခီ၏ "Spirits of the woods, of the rocks or hills, of the dryland and of the waters." မလော် is also found and indicates the pronunciation to which I have been accustomed. မလော် and မလော် are also found and agree with colloquial usage.

I am surprised that Mr. Cooper has not met with ဘရဲ့. I am afraid his reading has not been very extensive. I heard the form ရနဲ့ very early in my acquaintance with the Talaings. This would be represented by ဘနဲ့ and the form ဘအနဲ့ mentioned by Mr. Cooper and found in constant use is no doubt a softening down of the fuller form. သီမှူးနှေ့မြဲ is the expression for uncles and aunts.

Mr. Cooper's comment on ဘိုက်ဘက် sent me looking up your reference to Sudh. 2 ; the quotation should read ပမြို့ဘို့နာဘာရဘောဇ်နဲ့ lit., "he made use of food", "made a meal." ပမြို့ဘို့ is reformed spelling for the usual ပြုဘို့ and is for *paribhoga*. ပမြို့ဘို့ means therefore "to make use of", and in certain cases takes the place of ဗေး. It is usually found with a word meaning food expressed or understood.

In his comment on ယုံရှင် Mr. Cooper makes a curious use of ဤ and မြှေ့. The former indicates the indicative and the latter the imperative mood.

His explanation of လမောင် is fanciful I am afraid. It is the utter weariness that is referred to in a very sick person. I have usually found the compound လမောင်လွှေ့တဲ့၏

Mr. Cooper is again wrong in thinking that သရင် has no meaning of itself. It is oftenest found in the combination သရင်ပါဝါ demerit, wrongdoing, sin. It is frequently written သရဝိပါဝါ. It is also found as စရင်ပါဝါစခရင် means "deed, act", as ခရင်ပေါ်ဘု၍ "deeds of merit." This is apparently the later representative of Mr. Blagden's *sinran* of the Myazedi inscription and *sanran* of the Shwezigon. ဗေး and သာ are often interchangeable in Talaing as စွဲ for သွဲ. သွေးတိုင်းတွေ့ is "to cut off" "part with"; သွေးတိုင်းတွေ့ဘဟာ "to refuse food."

Well, I suppose the discussion will all help toward the end desired, but I am more and more convinced that a wider knowledge of literary Talaing than we now possess, even with a good acquaintance with Pali is needed to make headway in Talaing lexicography.

Hoping you are progressing with your Talaing studies.

Yours Sincerely,

R. HALLIDAY.

Cooper's notes on your "Nissayas" contain not a few mistakes of his own. He is quite wrong in ascertaining that තේසා is a contraction for තේත්සා. They are two distinct expressions (with similar signification) and the Sudhammavati has numerous cases of the former written out in full තේත්සා ; besides it occurs in the very old inscriptions. I will not quote the old form from memory but I can refer to it later, however it is a certain fact.

Moreover it ought to be explained to him that your transliteration does not purpose to render the pronunciation of Talaing. His own transliteration is hopeless even for that purpose. We need, I admit, a method of writing Talaing phonetically, but the sounds of the language must first be carefully studied and recorded and of course each local variety of pronunciation would involve some difference in rendering. For general purpose we must stick to our system of strict transliteration, neglecting the modern sounds altogether.

C. O. BLAGDEN.

ရှေးကအထိန်းဆမတပြုလျှပ်ကိုးကွယ်ပွဲခေါ်ကြခြင်းဆကြောင်း။

အထိမ်းအမှတ်ဟူသည်။ထိမ်းသည်။မှတ်သည်ဟူ၍၊ ရခိုင်းပြားခြင်းဖြစ်သည်။ထိမ်းသည်  
ကား၊ မရွှေမသွား၊ မကျိုးမထွေးရအောင်။ စောင့်ရှောက်ထားသည်ကို။ ထိမ်းသည်ဟူ၍ ဆိုလိုက္ခာ။ ချည်ခင်ကိုထိမ်းသည်။ ဆင်ဖြင့်ဆွဲ့နှာကိုထိမ်းသည်။ ကလေးကိုထိမ်းသည်။ သို့လေ  
ခေါင်ထိမ်းသည်။ သားသို့ကိုထိမ်းမြှားသည်။ ခုအြင့်ခေါ်ဝေါ်သာအရာကဲ့သို့။ ပတိနှီးမယမ်း။  
မရွှေ့မထွေး၊ မရွှေ့က်မပျက်။ တည်ကြည်ခွာစောင့်ရှောက်ခြင်းအရာဟူသူကို ထိမ်းသည်ဟူ၍  
မှတ်ရမည်။

အမှတ်ဟူသည်ကား။ ပေါ်မလျှောက်။မတိမိမကော်မလျှောက်မစီးခေါင်း၌။က္ခာည်းအကျဉ်းတင်၍ဖြစ်ခဲ့။တစ်ခုတစ်ခုသောဝါးအမှတ်အသားနှင့်။ ထုတ်ပို့သွန်းထားသော အရှင်ပန်းမြောက် အမှတ်အသားအဆောက်အအိုခဲ့သည်၏ကို။ ထင်ထင်လျှော်လျှေား။ မှတ်သားကြခေါင်းအထိ၌။ မှတ်သားခြင်းပြင်း။ ကျော်ပခြင်းပြင်း။ပြုခေါင်း။နှလုံးညွင်းခြင်းဟုဟူ၍လိုအပ်။

ထိုအထိမ်းအမတ်ဟူသူမျှတို့သည်။ အရာအားလုံး၏ခြားနှင့်ခြေအား မပြတ်ဖြူလုပ်ကျင်းပေါင်း။နိုင်သောလေးမြတ်ပြုခြင်းအမျှတို့ကိုပြုမြဲမြေးမွေ့တာအခြားပြုချေသည်။

အထိမ်းအမှတ်ကို။ရှေးတဲ့ရှေးခံ။အစွမ်းအလာယိသည်ကိုကား။မဟာနိပါတ် အနကာတ်တော်ကြီးတွင်။အနကာမင်းကြီးသည်။ ထိန်းချုပ်လီမီတိဂုံးချွဲ့ပါယြို့ပြီးလျှင်။ ရသွေ့ပြု၍ထောတွက်တော်မူရာ။သိဝတ်ဇော်မျှေးကြီးသော မျှေးမတ်အခြေအာရုံးအပေါင်းတို့သည်။မင်းကြီးအားတားဆီးမူကြောဖြစ်။ ပုံပန်သောမြတ်စွာနှင့်တိုင်းပြည်နှင့်လုပ်လိုက်သွားသော လမ်းခွံးတွင်။ အနကာမင်းကြီး၏ပုံပြုများ၏အမြတ်ဆုံးမြတ်စွာနှင့်လုပ်လိုက်သွားသော လမ်းခွံးတွင်။

శ్రీవైష్ణవాప్రాంగించి వెలువులు ఉన్నాయి. ఇది కొన్ని విషయాలకు సమాచారంగా అనుమతి దియబడి ఉన్నాయి. ఇది కొన్ని విషయాలకు సమాచారంగా అనుమతి దియబడి ఉన్నాయి.

କୁଣ୍ଡାରେତାକୁବ୍ରାଣ୍ଡି । ଆହା କୁଣ୍ଡିମିଳ୍ଲାଖି ଫୁରାଃଦେବାହାପନ୍ଥକାଲୀନୀର୍ଦ୍ଦିଷ୍ଟି ॥ ଏବରଣ୍ଡିକୁଣ୍ଡିମିଳ୍ଲାଖିର୍ଦ୍ଦିଷ୍ଟି ॥ ଏବରଣ୍ଡିକୁଣ୍ଡିମିଳ୍ଲାଖିର୍ଦ୍ଦିଷ୍ଟି ॥ ଏବରଣ୍ଡିକୁଣ୍ଡିମିଳ୍ଲାଖିର୍ଦ୍ଦିଷ୍ଟି ॥

ထိုကရပိတ်ဂုဏ်မင်း၏ရုပ်ပို့သွောန်ဂိုပင်လျှင်။သမီးသားသည်ထူးချွဲ၏  
တမ်းဆိုတိုင်တွင်လျှောက်အထိမ်းအမှတ်ပြုလုပ်ပူဇော်ထားလေသည်။

(၁၅) မြတ်စွာဘုရားဟောမလိုက်နိုင်သူများအဖြစ်သို့ရောက်တည်မှုသောကာလာ။ မာလုံတိမင်းခုရှင်းဖြင့်ကိုင်လျှက်။ ပုံငါးအောင်လျှောသည်ကိုရည်ရွယ်၍ တမ်းခွန်တိုင်တွင်။ အထိမ်းအမှတ်ပြုမြှုပ်နည်းခုရှင်းကိုင်လျှက်။ မာလုံသို့ကြော်ရှုပ်ပုံစုလုပ်ထားကြောင်းကို။ အပါဒီနိုက်များနှင့်မိန္ဒာနှင့်သောသည်။

(၁၆) မြတ်ခွာဘုရားသည်။သာဝဏ္ဏီပြည်။အတေဝန်ကျောင်းတော်လိုက်သိတင်းသုံးနေတော်မူခြင်း။သန်းခေါင်ယံအပါ။အပြင်ခြောက်ပါးကင်းသောအခုပ်ကျိုဝိုင်းပြီးဖျော်။ မဂ္ဂလာတရားတော်ကိုလျှောက်ထားဖော်လာသောနှစ်သားရှုပ်ပုံသဏ္ဌာန်။ အထိမ်းအမှတ်ပြု၍တမ်းခွန်တိုင်တွင်ဖို့ပြီးလျှက်နှစ်သားရှုပ်ထဲတဲ့ထားကြောင်းကို။သူတွေ့ပါတ်တွင်မိန့်ဆုံးလေသည်။

(၁၇) မြတ်ချာဘူရာရေးသည်။ပုဂ္ဂိုလ်နိုင်လ၊ ပုဂ္ဂိုလ်ကြံ့ချာနှင့်နေတော်မူစည်။ မြတ်ချိုင်းချာသော၊ အမွှဲကဏ္ဍအား နှစ်ယိုဝင်္ဂီးဟောကြားတော်မူသောအခါ။ အမွှဲကဗျာ-မာန်မာန်ဆက်ထိနှင့် ချုက်ချုပ်နေသော ကြောင့်။ သိကြားမင်းသည်သံချွောင်းကိုခွဲ့ချိုင်ပြီးလျှင်။ အမွှဲကဗျာကျောင်းကိုဖြတ်မလိုသူ့၏ အထိမ်းအမှတ်ဖြူ၏ တမ်းခွန်တိုင်တွင် သံချွောင်းကိုင်သော။ သိကြားရှုပ်ထု လုပ်ထားကြောင်းကို။ အမွှဲသုတေသနမြို့သို့ ဆောင်သည်။

(၁၉) မြတ်ချာဘုရားသည်။သဏ္ဌာတိနီး။ကျိုလဝတ်ဖြည့်အနီး။ တောကြီးဝယ်နေတော်မူ စည်။ မကြောဝွှာတိကိုမှလာသောနတ်ထိုအား။ မူဟာသမယ သုတေတော်ကို။ဟောတော်မူသည့်အ ပါ။ ဂုဏ်၏နာဂါးထိုတရားတော်နာလာသည့်သွား။ အထိပ်အမှတ်ပြုလုပ်၍။ တစ်ခုခွင့်တိုင်တွင်။ ဂုဏ်၏နာဂါးရှုပ်ပုံတရားတော်နာလာသည့်သွား။

(၂၀) မြတ်ခွာဘုရားဒေသလောင်းတော်ကုန်မင်း၊ ညီတော်အာနှစ်ဗျာလောင်း၊ နဂါးမင်းဖြစ်တော်မူသော၊ ကာလကို ရည်ရွယ်၍ အထိမ်းအမှတ်ပြုပြီးလျှင်၊ ထမ်းခွန်ထိုင်တွင်၊ ကုန်၊ နဂါးရှုံးထုလ်ထားကြောင်းကို ပဲပွဲရနိုင်အတ်တွင်မိန္ဒာဆိုလေသည်။

(၂၃) သတ္တုပြည်ဝယ်။သီရိဓမ္မဘာသာကမင်းလက်ထက်။သောကာလောက်။  
သူ့၏ ပါးစိုးသည်။ သာသနာပြုရောက်သည်နဲ့မင်းအောင်နှင့် ဖို့ကိုသော။ သူတေသနများမတို့  
သည်မားမည်ဟွာရုံး၊ ပါးရန်းလွှာသည်ကို။ လွှာပေါင်းတို့ဖြစ်၏။ ကြောက်လန်တွေးကြော်ကြ  
သည်ကို။မထောင်၊ ပါးမြင်လျှင်။ထိုမထောင်အသူ၏ ပါးစိုးသည်။ ခြောက်စက် ဖူလို ဖို့သော  
ခြေသိကိုယ်နှင့်တူသော။ ဥက္ကားသင်းတလုံး၊ ကိုယ်နှစ်ခုယိုသော။ နှစ်သိယ သဏ္ဌာန်ဖြင့်။ ကြီးစွာ  
သေားပကဗိကိုယ်ထက်နှစ်ဆာသာအောင် အုပ်ဆင်ခြေးလျှင်။ သီလွှာမတို့ကို ထိုက်၍ ပိတ်သီးကုန်  
လျှင်။သီလွှာမ အပေါင်းတို့ကြောက်နှစ်ထွက်ပြီးသွားကြကိုသည်။ မင်းအောင်နှင့် ဇွေးသောသူ  
ထောင်သည်။ ထိုမထောင်နှစ်ပါးတန်းခိုးကြောင့်။ အသက်တေားမှုချမှတ်သာရသည်ကို အခွဲ့ပြု၍။ အ  
ထိုင်းအမှတ်မှုတော်ကြောင်။ သောကျော်ရသတို့သားလုံး၊ အမည်ပေးလေကုန်သည်။

( ၁၅ ) ကထဲပဘုရားလက် ထက်တော်ဆိုက်။ မိဖူရား င ယောက်ထို့သည်။ ကုမ္ပဏီရုံး  
ပန်းကိုလက်ခဲ့းလျက်။ တရားတော်ကိုနာသောအာဆုံးဆိုက်။ အမိဝင်းမှပုံးသန္တော်။ နေရာခြင်း ဆင်းခဲး  
လွှာသည်ဖြစ်၏။ ပဋိသန္တော်ခြင်းကိုစေသောပါဟု။ ဆုပန်သောကြောင့်။ တခုသော ရေဒီပိုင်တွင်။  
လေးရေးလေးမြို့။ လေးနှင့်ယြာဖြာ၍ ဖွင့်ကုန်လော်။ ကုမ္ပဏီရုံးရွင့်ဆိုက်။ ကြောနတ်သမီး င လောက်။  
သန္တော်ခြင်းကြောကြောကြော။ သိကြေားမေးလဲး။ ကြောနတ်သမီးလေးလောက်ကို။ ပြသာမ် င ဆောင်  
အန်ဆင်း၍။ အခြေအနံ့နှင့်တာကွဲ။ ရှုံးမြို့နှင့်။ ဆင်။ ခြေသီး။ နှားလားဥယာဉ်ကို။ တိုးခိုးအပ်၍။  
အာခေါင်အာရာ်ထားလော်။

ထိုအပါ။ ကြောနတ်သမီး င ယောက်တိုကာ။ နှစ်ကျွမ်းမင်းသားသို့။ အကြောင်းကိုမေးလေသော်။ ကုမ္ပဏီရုကြာပန်းကို ယူလှာခြောင်းကိုပြောလျှင်။ ကြောနတ်သမီးတို့ကာ။ ကုမ္ပဏီရု ကြောပန်းသည်။ အကျိုးပိတ္တု၏အိပ်ဖြစ်ပါသည်။ ကြည်းဆောင်ယူသွားနိုင်ပြောင်းကို။ ပြောဆိုကြလျှင်။ မင်းသားသည်။ ကုမ္ပဏီရုကြာပန်းကိုယူ၏။ ကြောနတ်သမီး င ယောက်နှင့်။ အမို့ပြာန်သောအခားဖြင့်။ သွားပြုကြလေသော်။ ဘုန်းတန်းမီးအားနှုန်းတော်တော်ကြောင့်။ သိကြောနတ်မင်းသည်။ ပြဿာ၏ပုံဖော်မင်းပေးလေသည်။ ကြောနတ်သမီး င ယောက်တို့၌။ မင်းသားသည်။ ဗာရာကေသိပါပြည်သူပြန်လည်လှောရာ။ ရောက်လေလျှင်။ ပြဿာ၏ပေါ်မှုသက်၏။ ကုမ္ပဏီရုကြာပန်းကိုယူပြီးလျှင်။ မင်းကြီးအားဆက်လေ၏။ ကြောနတ်သမီး င ယောက်ပါကြောင်းကိုလေးမင်းကြီးကိုလောက်လေ၏။

မင်းကြီးသည်လဲ။ မှုံးမတ်စိုလ်ပါန္ဒေတက္ခာ။ နှစ်းတော်မြှို့ပြင်သို့ထွက်တော်မူလေ။ မင်းကြီးထွက်လျာသည်လိုက်။ ကြားနတ်သမီးတို့မြင်လျင်။ ဒီမီဘို့ဒေါ်လျာသာမ် ပုံလေးဆောင်သည်။ အထက်ကောင်းကင်သို့ ပုံတက်လေ။ ထိုအခါန္ဒကဗ္ဗာမင်းသားက။ အရှင်မင်းကြီးနှင့်ထိုက်တန်တော်မူမည်ထင်ပါ၏။ ယဉ်ဆောင်ခဲ့ပါသည်။ ဘုရားတော်ဖန်လျှင်အပါးတော်သို့ ရောက်ပါလိမ့်မည်။ ခေါ်တော်မူပါတဲ့ လျှောက်လေသည်။ မင်းကြီးကြားနတ်သမီးတို့ကို။ ခေါ်တော်မူရာပြသာမ် ဂောင်သည်။ ပြုပြင်သို့မှန့်မှုသက်ယူလေ။

ଯୁଆବି॥ମନିକ୍ରିୟାଙ୍କ॥କୃତ୍ତିଗୁଡ଼ାମନିଦିବାଙ୍ଗିଶେଖିଲୋରୁଣ୍ଡି । ପିଣ୍ଡରେତର୍ବୁଦ୍ଧିଦୟାତାବି ॥ ମନିଦିବାଙ୍କ  
ଶେଖିଲେଲୁଣ୍ଡି ॥ ପ୍ରିତ୍ତିର୍ବୁଦ୍ଧିଲେଲାହେବାର୍ଦିତାନ୍ତିଲ୍ଲି ॥ ଲାହିରୀରେ ଦୂରିକୁଳିଜ୍ଞି ॥ ମନିଦିବାଙ୍କରୁଣ୍ଡିତର୍ବୁ  
ଦେଖିଲେଲୁଣ୍ଡି ॥ ମନିକ୍ରିୟାଙ୍କରୁଣ୍ଡିତର୍ବୁଦ୍ଧିଲୁଣ୍ଡି ॥ ଶ୍ରୀଵିଷ୍ଣୁକ୍ରିୟାଙ୍କରୁଣ୍ଡି ॥ ଦିନ୍ଦୁକୁଳିତିଶାକର୍ତ୍ତିକୁଳିକୁଳିମୁଣ୍ଡି  
ପ୍ରିତ୍ତିଲ୍ଲି ॥ କୃତ୍ତିଗୁଡ଼ାମନିଦିବାଙ୍ଗି ॥ ସାହାତୋତ୍ତରିପ୍ରିତ୍ତିର୍ବୁଦ୍ଧିଲୁଣ୍ଡି ॥ ଗ୍ରୀବାକର୍ତ୍ତିଲୁଣ୍ଡି ॥ ଦିନ୍ଦୁକୁଳି  
ପ୍ରିତ୍ତିଲ୍ଲି ॥ ଅତ୍ୟନ୍ତିକ୍ରିୟାଙ୍କରୁଣ୍ଡି ॥ ପ୍ରିତ୍ତିର୍ବୁଦ୍ଧିଲୁଣ୍ଡି ॥ ଶ୍ରୀଵିଷ୍ଣୁକ୍ରିୟାଙ୍କରୁଣ୍ଡି ॥

မင်းကြီးမယ်သည့်နောက်။ နှစ်ကျွဲ့မင်းသည်။ မင်းအဖြစ်ထို့ရောက် လေလှပ်။ မင်းကြီး၏ညီတော်။ ကောသန္တမင်းကြီး၏သားမက်တော်ဖြစ်သော။ သုဒ္ဓာသည်။ နှစ်ကျွဲ့မင်းကို အကြောင်းအရာရောက်လိုက်ခြော။ မုန်းယူလေသည်။ နှစ်ကျွဲ့မင်း၏ဘုန်းသမ္မတဘုရားကြောင့် ရှုတွေ့ခိုးတို့၏သည်။ ကုစ္စရာကြာရိုး၊ ကြာချွဲ့ယူး၊ ကြာချွဲ့က်း၊ ကြာချွဲ့မှုံး၊ ကြာချွဲ့မှုံး၏တနေ့မပြတ်နိုင်းဒီးနှင့်လာရောက်စုံထားကြောင်းကြောင်း။

မင်းတို့သည်ကား။ဘုန်းတန်းတော်ကြီးရာဇ္ဈာန်။ဇွဲးဖိုးချက်ဖြူပြုရာဇ္ဈာန်။မီဘယ်ရာဇ္ဈာန်။  
 ထို ၃ ဋ္ဌာနတို့ကို။ မမေ့အပ်ဆိုသည်နှင့်အပြီးငြင်းကြာန်ယူလေးမြှော။လေးအြာသော ကြာရိုးထိုကို။  
 လေးဘယ်။လေးဘုတ်ကုန်။သောင်ချက်။သောင်ချက်။အခြေပြုပြီးလျှပ်။ခါဝိရင်ငါးကာ။ ကြာချက်  
 အဖျားလိပ်သည်ပုံသဏ္ဌာန်။ ခြေရင်းကကြာချက်အရင်ဒေဝုပုံသဏ္ဌာန်။ နေရာကျိုမ်။ စက်တော်  
 ခေါ်သည်။ ထိုစက်ခေါ်သောနေရာသည်။ အခြားသော နေရာတို့တော်။ သာလွန်ပြော နှီးသည်ဖြစ်  
 သောကြောင့်။သာလွန်ဟုအထိမ်းအမှတ်ပြု။ သမတ်တော်မှသည်။သမ္မသရော်မှု။သလွန်။အလွန်။  
 သသမြှင့်စကားေးရွှေလျှောခေါ်ဝေါ်ကြလသည်။

( ၁၆ ) နောက်နောက်လောမင်းတို့လက်ထက်။သခိုပျော်။ အွှေဒွှေအာမယြို့လော်။ ဝစ္စာ့တို့ကို  
လုပ်ဆောင်လေသည်။မျက်နှာကြောက်။ ကြားယပ်မှာလေး။အွှေမင်း။ငွေအွှေ။ပါတ်ရမထည်။ ခါသာတို့ကို။  
ကုမ္ပဏီကြောဆုံး။ကြားယပ်။ပုံသဏ္ဌာန်ထဲလုပ်၏။မျက်နှာကြောက်ကြားယပ်။အထိန်းအမှတ်ပြုလုပ်သုံး။  
ဆောင်ကြလေသည်။

(၂၇) ထိမြင်။ ကြာရှိးကြာ ရွှေ။ ကြာဖွံ့းကြာချုပ်။ ညောင်ရွှေ။ ညောင်ခေါ်။ ညောင်  
ညွှန်။ အခုပ္ပါသည်ထိုကို။ သုံးဆောင်ရွက်လုပ်ကြဖွံ့းဖြစ်သောကြောင့်။ သာလွန် ညောင်စောင်း ထူးခေါ်  
ထိမြင်အမှတ်ပြည်၏။ သာမှတ်ကြလေသည်။

(୨) ଶ୍ରୀକୃଷ୍ଣଙ୍କାରିଙ୍କ ଆଧିକିଃ ଆମୁତିରୁଦ୍ୟତିତ୍ରେଣିଲ୍ଲାପିନ୍ଦିନି ଏବଂଗ୍ରେଣିତ୍ରେ  
ଦ୍ୱାରିଲେବାତେବି । ଆଯନ୍ତିରଙ୍କାରିଙ୍କାରୁକ୍ତିରୁଦ୍ୟତିତ୍ରେଣିଲ୍ଲାପିନ୍ଦିନି । କ୍ରୁଦ୍ଧିଳାଗିଲାହାରଣ  
ଯାଇଥିବି । ଯାହାକୁ କ୍ରୁଦ୍ଧିତାରୁଦ୍ୟତିତ୍ରେଣିଲ୍ଲାପିନ୍ଦିନି । ଯାହାକୁ କ୍ରୁଦ୍ଧିତାରୁଦ୍ୟତିତ୍ରେଣିଲ୍ଲାପିନ୍ଦିନି ।  
କ୍ରୁଦ୍ଧିତାରୁଦ୍ୟତିତ୍ରେଣିଲ୍ଲାପିନ୍ଦିନି । ଯାହାକୁ କ୍ରୁଦ୍ଧିତାରୁଦ୍ୟତିତ୍ରେଣିଲ୍ଲାପିନ୍ଦିନି । ଯାହାକୁ କ୍ରୁଦ୍ଧିତାରୁଦ୍ୟତିତ୍ରେଣିଲ୍ଲାପିନ୍ଦିନି ।  
କ୍ରୁଦ୍ଧିତାରୁଦ୍ୟତିତ୍ରେଣିଲ୍ଲାପିନ୍ଦିନି । ଯାହାକୁ କ୍ରୁଦ୍ଧିତାରୁଦ୍ୟତିତ୍ରେଣିଲ୍ଲାପିନ୍ଦିନି । ଯାହାକୁ କ୍ରୁଦ୍ଧିତାରୁଦ୍ୟତିତ୍ରେଣିଲ୍ଲାପିନ୍ଦିନି ।

(၂။) ဘုရားအတိတေသနများတွင်။ကြောပန်းမောက်။ကြောပန်းလင်ဟူ၍။အထိမ်းအမှတ်ပြုလုပ်ထားလေသည်၏။ယခုကြောမောက်။ကြောလန်တဲ့။ခေါ်ဝေါ်လျက်ယိုလေသည်။

( ୧୦ ) ଇନ୍ଦ୍ରିକାଯାହି ॥ ଶୁଣି ମୃଦୁଃତୋର୍ମୁଖାଭ୍ୟା ॥ ଆତମ୍ଭିନ୍ଦୁମନ୍ଦିତୋର୍ମୁଖି ॥ ଗ୍ରୋପନ୍ତିଷ୍ଠାନିଙ୍କ  
ଲ୍ୟାଙ୍କ ॥ ଆତିଥିରେ ଆମୁତିପ୍ରଦାତିରେ ଦେଇ ଯୁଗମ୍ଭାବନ୍ତି ॥

(၃၁) တန်ခိုးကိုလုံးဆွဲထားသောတစ်ခုကြိုင်တို့ရှိကြောင်းမြောက်ခြောက်။ ညျှပ်တိုင်၊ ၂ ထိုး၊ ၄ ထိုးထားသောတိုင်တို့တွင်။ တိုင်ထိပ်ရှိကြောင့်။ ကြောဖူးပုံသာဏ္ဍာန်။ အထိခိုးအမှတ် မြှေတွင် ထားတွေဖြေကြေသည်။

( ୧୨ ) ହୃଦୀସ୍ମରଣେତରିମୁଖ୍ୟ । ତାଳୋଚନରେତରିମୁଖ୍ୟ । ଅପରିଜିତ ହୃଦୀସ୍ମରଣେତରିମୁଖ୍ୟ ।

လျယ်၏ကျက်သိရေမနီလာယှုံခြင်းငါး။ အထိမ်းအမှတ်ပြု၏။ တင်ထားပူဇော်ဖြီးမြှောက်လွှာယှုံ  
ကြသည်။

(၃၅) အထက်ကဖော်ပြုခဲ့သော။ ပြောင်ရှုက်။ ပြောင်ခက်တိုက္ခိုးလမ်း၏။ ဘုရားခေတ်။  
ဆည်းလည်းများတွင်။ ပြောင်ရှုက်။ ပြောင်ခက်များကို။ အထိမ်းအမှတ်ပြု၏ဆွဲးထားလွှာယှုံသည်။

(၃၆) ဘုရားကိုမိုးကာသောထိုးမြှုတိုးတွင်။ ပန်းဆွဲးကြာယ်။ ပြောင်ရှုက်။ ပြောင်ခက်တိုက္ခိုး  
ဆွဲးထားလွှာယှုံသည်။ ထိုးမျက်ချိုင်တွင်လွှားကြားမျှ၍ကြားပွင့်ပုံး။ ထွေပသောအွေ-စက္ခာမှသည်တို့ကို။  
အထိမ်းအမှတ်ပြု၏ချယ်ကြော်ထားလွှာယှုံကြသည်။

(၃၇) မြင်းနှုန်းပွဲးထိန်ဆောင်တိုးပွဲးတော်များတွင်။ ကြားပန်းပုံး။ ကြားမှုံးပုံး  
ပြီးလျှင်။ အထိမ်းအမှတ်ထားလွှာယ်။ ဘုရားခီးပူဇော်လွှာယှုံကြသည်။

(၃၈) နှစ်သာကိုဝင်မင်းမျိုးသည်။ မန္တို့မအောက်တွေ့ကို။ တကောင်းတည်ဟောင်းအရှင်ရှိုက်။ မြို့ပြ  
ပြည်ရွာတော်ပြီးလျှင်။ မိုးခံတော်မူကြေား။ မင်းမျိုးသတိုး (၁၇) ဆက်ဆတွင်း။ သဘွဲ့ပါတို့ကို  
ကြောင့်။ နိဂုံးရွှေ့ပေါ်လှောသိမှား။ ညည်အချိန်တို့ကိုတွေ့ရှုံးရောက်လေသည်။ နိဂုံး  
၏အန္တာရုံးရှုံးရှုံးရှုံး။ ကျယ်ကာမြို့လှောင့်သော်လှုံး။ ကြေားပြီးလျှင်။ လေးမျှကိုနှာသံကျွန်းရက်စိတ်လေ  
သည်။ တံ့ခါးပေါ်ကိုလေးဖောက်ထားသည်။ တံ့ခါးရွှေ့ကိုတံ့ခါးကျွန်းတပ်ထားသည်။ ယပံ့။ သန်လျှော်။  
ရုတ်။ ဓရေးတို့တွင်။ တံ့လုံးလို့တွင်။ နှစ်ရွှေ့ကိုတို့တွင်။ ပေါ်ရောက်လွှာသည်နှင့်  
စောင့်နေသောမင်းကာ။ သံ ဗုံးရက်ကို။ ရုတ်။ ဓရေးမြှင့်။ ချင်ချင်ပြည်မောင်ခတ်သောအခါး။ နိဂုံးကြား  
၏။ ပေါ်သမာန်ဖြော်။ အလိပ်နှင့်ရွှေ့ကိုတို့တွင်။ အချိန်ရွှေ့ကိုတို့တွင်။ မင်းကြီးသည်  
တံ့ခါးကိုဖွံ့ဖြိုး။ သန်လျှော်နှင့်နိဂုံးလည်ပင်းကိုလို့တွေ့ရှုံးလိုက်ရာ။ နိဂုံးသောလေသည်။ ထို့  
ကိုရှိုက်ရှုံးပြု။ အဆက်ဆက်သောကြော့။ သတို့ရှိုက်ရှုံး။ အရွှေ့ကိုတို့တွင်။ နိဂုံးအရောက်ရှုံးရှုံး။ အကိုယ်ချိုပြီးလျှင်  
ခြင်းအတွက်သောကြော့။ သတို့ရှိုက်ရှုံး။ အရွှေ့ကိုတို့တွင်။ အရွှေ့ကိုတို့တွင်။ နိဂုံးအရောက်ရှုံးရှုံး။ သတို့ရှိုက်ရှုံး။ အကိုယ်ချိုပြီးလျှင်  
လေသည်။

(၃၉) ရုအကြိုတ်ပြည်ရှိုက်ရှုံးရှုံးရှုံးရှုံးတော်များသော်။ ပွင့်မသတ်းရှုံးတင်သော။ အကောတသွေ့  
မင်းသည်။ အမည်းတော်မြို့သာရမင်းအား။ ပြုဗုံးမီးသောပွဲ့နှစ်ဦးလိုက်တို့ကိုလေသောကြော့  
ရုသွေ့နှစ်ဦးမြို့ပြုဗုံး။ ခုခသာ။ တို့သည်။ ထိုတို့ကိုလေသောကြော်မက်မှုပါတ်လွှာသည်။ မြတ်ခြား  
များမီးတော်အတိုင်း။ မညည်းတော်ရာရှို။ အော်သာရှုံးရှုံးရှုံးရှုံးရှုံးရှုံး။ မျှမီးသာရှုံး  
၏။ သူသွေ့နှစ်ဦး။ သူသွေ့နှစ်ဦး။ သူသွေ့နှစ်ဦး။ ထို့သည်။ ထို့သည်။ မြတ်ခြားမြို့ပြုဗုံး။ မြတ်ခြား  
သာရှုံးတို့သည်။ မညည်းတော်ရာရှို။ အထိမ်းအမှတ်ပြု၏ပုံး။ နှစ်ဦးတော်မြို့ပြုဗုံး။ မြတ်ခြားမြို့ပြုဗုံး။ ရုသွေ့နှစ်ဦး  
ရှုံးရှုံးရှုံး။ တို့ကိုလေသောကြော်။

(၄၀) ပေါ်ကိုကြိုးရှုံးရှုံးရှုံးကြသော်။ ဌာန်။ ဝက်။ သီလုံး။ သူ။ ဗုံး။ ကျားမှုံး။ ထို့ခြောက်  
ပါးသောရန်သွေ့တို့ကို။ ပါယ်ဖော်ကိုရန်။ မြှောက်ထိုးအားသမည်းတော်နောက်မင်းကာ။ လေးမြှောက်ပေးအပါး  
သည်အတိုင်း။ မြှောက်နှင့်ရှား။ အောင်မြင်သောကြော့။ မင်းအဖြစ်ရှိုက်ရောက်တော်မူလျှင်။ ခြောက်ပါး  
သောရန်သွေ့တို့ကို။ အောင်မြင်ပြီးလျှင်။ မြှောက်နှင့်ရှားတွင်။ သာလွှန်တော်အောက်။ ခြောက်  
မြှောက်နှင့်ရှားတွင်။ မြှောက်နှင့်ရှားတွင်။ သာလွှန်တော်အောက်။ ခြောက်နှင့်ရှားတွင်။ သာလွှန်တော်ကို။ အမြို့သာရှုံး  
သာလွှန်တော်ကို။ အလျားအနှံးရှုံးရှုံးရှုံးရှုံးရှုံး။ အထိမ်းအမှတ်ပြု၏သာလွှန်တော်ကို။ အမြို့သာရှုံး

မျက်လွှဲးတော်ဝေဒနာလဲးသာနိယျင်းကြည်လင်တော်မူလေသည်။ ဦးထဲးကိုအခြားပြု၏ မင်းအဆက်ဆက်ထို့သည်။ တေားတော်ရုပ်။ ဘွားတော်ရုပ်။ ခမည်းတော်ရုပ်။ မယ်တော်ရုပ်မှားကို။ ပုံသဏ္ဌာန်ထိုလုပ်၏ပူဇော်ကံတော်ရုန်း၏အတောင်ဆောင်တော်။ကွန်းခိုင်တိုင်အတွင်းတွင်။အနောက်ဆီမျက်နှာမှုလျှောက်။ ကောင်းမွန်စွာမြို့ခို့ခင်းကျင်း၏။ အထိမ်းအမှတ်။တင့်တယ်မြင့်မြတ်စွာထားတော်မူလေသည်။

(၄) မြို့သူဟျှောင်းလေးကောင်း၊ မြို့ကောင်းဟျှောင်းလေးကောင်း၊ ထိုသွေးပါသည်။ တန်ခိုးသွေးပါသည်။ သီလူးတို့ကြောက် အံ့ဩဝိုင်းဖြစ်တွက်နှင့်သည်။ ထိုမြို့သူ၊ မြို့ကောင်း၏အဆင့်တော်တန်ခိုးသွေးကောင်း။ အခွဲခွဲရှိရိုက်။ အညွှန်အန္တယ်ဖြစ်သော လွှာကျော်ပါသည်။ အလွန်နဲ့တင့်တယ် ဖွေယိုရာ သည်ဖြစ်၍။ သံပုံပွဲမင်းသားသည်၊ မြို့သူ၏တန်းသာကိုဝိုင်ဆင်ပြီးလျှင်။ သီလူးကိုဖြစ်းချောက် ရားသီလူးတို့ ကြောက် အံ့ဩထိုင်လန့်ပြီးကြောည်ရှိ။ နိမ့်အတိုင်းအမှတ်ပြု၍။ မင်းတို့မဲ့နေရာဖြစ် သေား၊ ရားအပဲလွှင်၍ မြို့က်တော်။ လက်ယာလတဲ့ ရားတွင်။ မြို့ပန်းမြို့နှင့်လုပ်ပြီးလျှင်။ အခြား မြို့သူများလေးတွင်။

ଶିଳ୍ପୀଙ୍କରୁ ଯାଏଇଥିରୁ ମୁହଁରାରୁ ପରିଚାରିତ ହେଉଥିଲା । ଅନ୍ୟାନ୍ୟ କର୍ମଚାରୀଙ୍କ ଦ୍ୱାରା ପରିଚାରିତ ହେବାର ପରିବର୍ତ୍ତନ କରାଯାଇଛି ।

လျေားတွင်ရဲးမှတ်စွုးတွင်၏၌ကောင်။ ၌၍၃၂။၌ပန်းစာည်ထိယုလုပ်ထားခြင်းပွဲ၏များရှိကို။ ထိန်ည်းအတူထုလုပ်ထားကြလေသည်။ ဦးကဲ့သို့အထိမ်းအမှတ်ပြု၏ထုလုပ်ထားခြင်းသည်။ အန္တရာယ်ကင်းသည်ဟုထင်မတ်ကြလေသည်။

ଯିକ୍ରିଃବୁ କ୍ରିଃକୋବନ୍ ॥ କ୍ରି ପଥିଃ ତ୍ରୀ ଵଲ୍ ॥ ଗଣ୍ଠାଲ ରହିଦୀନଃ ବାଃ ତ୍ରୀ ॥ ମୁବା ଶ୍ରୀଦୀନଃ ଶ୍ରୀ ଦେଇ ଯ୍ରି  
କ୍ରି ଲେବଲ୍ ॥ ଯିକ୍ରି କୋବନ୍ ଗବା ଗଣ୍ଠାଲ ରହି ପ୍ରଲ୍ଲତ୍ତି ହନ୍ତି ଲଙ୍ଘନା ତ୍ରୀ ଵଲ୍ ॥ ଯି ଦୀନଃ ବାଃ ତ୍ରୀ  
ଜତିତିଃ ଆମରି ପ୍ରାପ୍ତି ଦୟା ଯି କ୍ରି ଲେବଲ୍ ॥

(၄၄) ဘုရင်မင်းမြတ်ကိုခံဆောင်မှုရာနှစ်းတော်တွင်။ ပထား(၉) အနီးထားရာစေဆာင်များနှင့်။ မင်းမြန်းမလိုပူအောင်ခံရာဖြစ်သောအနေကိုပွဲးတက်ဆောင်တွင်။ ဟရက်ထားကိုထုတ်ပေါ်၍၊ အောက်ကြာဖူးခံသော်၊ ပြုမာသုနပလျှင်တုစာထိုးအမှတ်ရှုံးလှုပါတယ်။

(၄၅) သာကရ္နားလာ ၄-ခုနှစ်။ ဟံသာဝတီပြည့်ကြီးကို မြို့ခိုင်တော်မူသာ။ မဟာဇာတီတော်ကြီး ဒါယကာ။ ဟံသာဝတီဆင်မြှုံးများ ထွေးစွဲမင်းတရားကြီးသည်။ သာကရ္နားလာ ၄၃ ခုနှစ်တွင် နတ် ခြားခိုင်တော်မူရာ။ အလယ်တင်းတော်ကို၊ သားတော်ငါးရွှေကိုယာမ်းတာ။ ကျောက်ထိုင်ကန်းအရှင်။

သင်းချိုင်းတော်တွင်။ အစိတ်တည်ထားရှိ။ ငါးမိန်းတရားဖြီးကံကုန်သောလရက် ကျော်ကြသူ။ သားတော်သီးတော်တို့ ဆတိမ်းအမှတ် ပွဲးတော်မြှုလိုပူဇော်တော်မူကြသည်။ ထို့မေတ္တာကို ယခုမှာမြန်မာရားဟာရှိ၏ ပေါ်ပေါ်၍ ကြသည်။

(၄၆) သာကရုဇ် ၁၁၁၅ ခုနှစ်၏ ရတနာသိပ္ပါတဲ့ထည်တောင်တော်မူသော။ အထောင်းမင်းတော်ရုံးကြီးသည်။ မိမိရှင်တော်ကို၏သိမ်းမျှတော်မူတွင်။ဘုရားခေတ်တည်ထားတော် မူဖြေးလျှင်။အောင်းဆုံးသိမ်းမျှတော်မူလျှင်။မိမိစွေးဖွားသောလရှင်ရောက်သောဆော်။ အထိမ်းဆောင်ရွက်ပေးတော်မူလျှင်။

(၄၀) ထားတော်ဘဏ္ဍာဂါ။မြစ်ကိုင်းမန်းနှင့်ငြိုင်းသို့မင်းတို့ နတ်ပြည်းစံအထူး  
ရွာ၊ သင်းရှင်းတော်ရွာ၊ အော်တိန်းပြသာရ်ပြုလုပ်၏။ နတ်ပြည်းစံတော်မူလော့-လရက်ကျောက်  
လျှပ်၏ သားတော်မြေးတော်၏မြှစ်တော်၏။ အော်တိန်းတော်၏။ အထိမ်းအမှတ်ပြုဖွံ့လမ်းသတင်  
ကျင်းပုံပုဇွဲကြလေသည်။

(၄၉) မဲ့တေသနရေးရုပ်နည်းလုပ်ငန်းတော်ထည်။ ပဋိမသစ် ပါယနာတင်မင်းတရားကြီးနှင့် တော်မူရွာ၊ အလောင်းတော်ကို မြှို့နှင့် တော်မူသော။ ရတနာအမျိုးမျိုးတို့ ဖြင့် ချယ်သော။ ဧည့်နှင့် ပြသာ၏ တော်ကြီးကို နှစ်ပြည့်ခံဆောင်မူသော။ လ-ရက် သို့ ကျရောက် တော်မူလျှင်၊ သားတော်။ သမီးတော် ဆွေးတော်မျိုးတော်။ မူးတော် မတိတော်။ မဟာ ရာဇာဝေါယား။ မြှို့ခားတို့မှာ မြှို့အတိုင်း မြှို့လုပ်ခြီးလွှင်၊ မင်းတရားကြီးသက်တွေ့အသွေးသံ့ာတော် မြှတ်များကို ဆွဲမီးသက်နိုးကာလှုံး မူးအောင်တော် လေသည်။

(၅၀) သာကရာဇ် ၁၁ ရုပ္ပန္နယူလိန်လ ဖွားသော်။အာဖြိုးအိုး။အီဂိုဏ်။နှေးတို့မှ-နွေးမြင်သော နှိုး-အခိုးသား၊ ဝယ်မည်၌ ပုံပါ၍ တံသိပိ-စက်းနွားထိသိရိယာဒွါန်ဒဇေဟာများရှာဖို့ဖြစ်၍။ ညောင် ကုန်ဆရာတော်ဘုရား၏ သည်။ သာကရာဇ် ၁၂၀၃ ခု၊ သက်တော် ၅၄၈ ပါတော် ၃၄ တွင်ပုံ တွေ့နိုင်တယ်မူရှာ။အခိုးသော်ကို။အမပုရုရှိမြောက်။ဟာမုမှတ်လေးဖြူ။ ရသာတန်း။ ရတနာဘုရိုရှိ အထယ်တွင်။ ကောင်းမှုတော်ပုံမေတ္တာလိုတားရှာ။ အခိုးအိုးမေတ္တာပုံးပုံးအထိမိုးအမှတ်ပြုလှုပ် ကျော်ပုံဖော်ကြလေသည်။

ထိုကိုအိမ်တစ်ခုပြုလုပ်ခြင်း။ကုသိုလ်ကောင်းမှုပြုခြင်းမော့၊ အထိမ်းအမှတ်ကိုနှစ်စဉ်အမြဲပြုလုပ်လျှော့ကြရသည်။

(၁၅) ဖြတ်ခွာဘူး၏ သားတော်။ အပိုယာအန္တယ်ဖြစ်တော်မူကြသော။ တံသိပါတော်ရုံ၊ ဆရာတော်၊ တံသိပါတော်မူရ သယ်ယောတော်အသွင်တို့သည်လဲ။ ဇွေးလရက်သို့-ရောက်သည့်အခါး၊ သိတင်းသုံးတော်။ ဆရာတော်။ သယ်ယောတော်တို့အားလည်းကောင်း၊ ထပည့်အားလည်းကောင်း၊ ပရီကွဲရားအသုံးအဆောင်တို့ဖြင့်၊ မြို့ခြားကိုသောက်ပုံးခြင်း။ သောဖြို့ခဲ့သွယ်တို့ကိုကျေးမှုပြုခြင်း။ ဇွေးခြားမြို့ကြရသည်။

(၁၆) ဂန္ဓာလရာမြို့တိုင်းသားတို့သည်။ မိမိတို့သိုးဘွားမိဘတို့သော့၊ မြို့နှင့်တို့ကိုပြုခြင်း။ အထိမ်းအမှတ်ပြု၍၊ တန်ခိုက်တို့မူမျှအောင်ကံတော့မြို့၊ အလွှာအမြဲပြုကြရသည်။

(၁၇) အနောက်တိုင်းဖြည့်သားတို့သည်။ မိမိတို့ကိုးကွယ်သော့၊ ဘုရားသခင် ဗျားတော်ရုံ၊ သော့၊ လရက်ကျောက်လျှော်။ ပူဇော်ကံတော့မြို့ခြင်း၊ မိမိတို့အပေါ်၌ကို အုပ်ချုပ်သောဘုရင်မင်းတို့၊ သိတိကိုခံသည် ကိုခွဲး၍ သော်လုပ်း၊ နှစ်းသက်ရှည်သည်တို့ခွဲး၍ သော်လုပ်း။ ဘုန်းတော်ကံတော်ကုန် သည်ကိုခွဲး၍ သော်လုပ်း၊ တစ်ဦးတုရုံသောအဆောက်အအုံ။ ဥယျာဉ်ရေကန်။ ရုပ်ပုံးသွောန်မသည်များ ကို။ အထိမ်းအမှတ်ပြုလုပ်၍ သားမြို့ကြောစာမြဲပြုလေသည်။

(၁၈) မြောအပိုးသားတို့တွင်း အချို့မီမီတို့ ထိုးဘွားမိဘတို့၏။ အရှုံးကိုသင်လုပ်ပွဲ့။ မြော့-ဆင်ရှုံး၊ အရှုံးနှင့်ပုံးစံးသည်တို့ကုန်ပြုလုပ်၍၊ စေတိကဲ့သို့၊ ကိုးကွယ်ခြင်း၊ အထိမ်းအမှတ်ကို။ ပြုလုပ်ထားသောအလွှာပြုတတ်ချေသည်။

(၁၉) သီတို့ကျွန်ုတ်း။ သေခနိုင်းအနောက်၍။ ကောလန္တာမြို့ စသည်တို့ကို။ နေတိုင်ကုန် သော့၊ ဗုဒ္ဓသာသနာအတူပျော်ကုန်သော့၊ လူ့အပေါင်းတို့သည်။ ဖြတ်ခွာဘူး၏။ ဗျားတော်မူသော လရက်၊ ဘုရားဖြစ်တော်မူသော(လ)ရက်၊ မဟာ့ပရီနို့မာန်ဝင်စံတော်မူသော(လ)ရက်။ အထိမ်းအမှတ်ထားလျှော်၍ နှစ်စဉ်ကဆုန်လပြည့်နေ့ကျောက်လျှော်။ ကဆုန်သောင်ရေသွေးပွဲးတော်ကျွန်း၊ ပြုလုပ်လွှာအခြားမြို့ကြရသည်။

ယင်းသွေ့ဖြစ်၍။ ရွှေးကာအခြားမြို့လုပ်ထားသောအထိမ်းအမှတ်။ အရပ်ရပ်တို့၏သငောက်တိုင်း၊ ယုံးကျေးသောသူတို့ဖြစ်ခေါ်။ ပန္တိတာနှေ့သောဝနာယူသော မနီလာပုံးနှင့်အညီကျွန်းဖြောက်ကုန်သော့၊ သူတော်ကောင်းတို့အတွက် မှတ်သားသတိပြုကြရန်။ ကျမ်းရန်တို့မှတ်တော်ကြိုးကိုပေါ်သောညီး။

ဆရာသိန်း။  
မော်ဒါန်း။

## REPORT OF THE SUPERINTENDENT, ARCHAEOLOGICAL SURVEY, BURMA, 1913-1914.

This report is as interesting as its predecessor. Besides the usual accounts of the examination and preservation of monuments, it deals with excavations at Pegu and Twante, which yielded promising results. The Superintendent's labours at Yathemyo and Wingaba, Pegu met with disappointment, as they yielded nothing worthy of note. The Yathemyo. 'The Hermit's town' of Pegu thus proved to be far inferior in archaeological interest to the Yathemyo of Hmawza. As its name indicates, it turns out to be nothing more than a cluster of monasteries built in regular rows on three sides round the principal building in the centre. The Wingaba is a name for the Vindhya Range, where the future Buddha as King Vessantara gave away in alms his wife and children. Such a consecrated spot from the Buddhist point of view was expected to yield some good results. But "Everything is now a mass of indescribable ruins". Mr. Duroiselle's efforts at Shwegugyi and Ajapāla, Pegu were attended with better success. The former, also known as the Bodhigū (Bodhiguha) was erected to commemorate the Buddha's attainment of Supreme Knowledge under the Tree of Wisdom. It is now in ruins covered with thick jungle. From the débris which fell from the two rows of niches, Mr. Duroiselle recovered forty-four terracotta plaques, some glazed and others not. The glazed ones are of two colours, green and chocolate. The inscriptions are in Talaing and those that can be deciphered represent "the army of Māra with the head of a parrot", or of a horse, a camel, etc., as the case may be. In one of the inscriptions occurs that curious word *krit* (p. 13) which Mr. Duroiselle renders by 'krises,' meaning thereby a Malay *kris*, a word borrowed by the Talaings from the Javanese. Though there can be doubt that the Talaing word means a knife or a dagger, there is some doubt as regards its etymology. As we cannot account for the change of final *s* of the Malay into the final *t* of the Talaing, it would seem better to adopt the alternative view, mentioned by Mr. Duroiselle himself, that *krit* is from the Sanskrit *kṛti*, meaning a knife or a dagger. We, however, are inclined to accept either derivation with reserve until further researches dispel the doubt.

The plaques recovered from the Ajapāla pagoda, Pegu commemorate the Buddha's temptation by Mara's daughters. The figures with inscriptions confirm Mr. C. O Blagden's reading of similar glazed tiles, for which see the Journal of the Royal Asiatic Society, 1912, page 695.

Mr. Stewart who conducted the excavations at Pegu, both the old and the new sites is to be congratulated on his success. He recovered 9 Talaing inscriptions, which prove the existence of Visnuism in Pegu. The evidence for Çivaism is not so conclusive. The Kyaik-pon, that is, the figures of four Buddhas back to back seems to indicate Cambodian influence, while another bronze figure of a Buddha points to Siamese influence. These discoveries are far reaching in their results, which only remain to be confirmed by future investigations.

Of more interest to the general reader are the paragraphs containing such notes as Architecture in Pagan, and the Religious Art in Burma. Mr. Duroiselle promises us complete treatises on these. A monograph on Pagan would be especially welcome. A visitor to Pagan without a guide generally finds his first wave of enthusiasm subside, being like a person studying the map of a country he has never been to. We daresay Mr. Duroiselle will give us much valuable information and in such a way, let us hope, as to do justice to the subject, as well as entertain the unprofessional visitor. Nothing definite has hitherto been written on the Religious art in Burma. Mr. Duroiselle's paragraphs on the subject are interesting and he should be given every encouragement in the pursuit of the work. The Palace at Mandalay needs a guide book just as much as the Pagodas at Pagan do. We are glad to learn that this work is practically finished.

M. T.

## THE ĀNGUTTARA NIKAYA, NIPĀTAS I—III

(Translated by E. R. Gooneratne)

One would have expected a translation of the Ānguttara Nikāya to have been undertaken under the auspices of the Pali Text Society. Whatever reasons there may have been for the present translator to have published his work in Ceylon, we have very little ground for complaint as far as its merits are concerned. We however, are conscious of the different quality of the paper and type used.

The Ānguttara Nikāya is one of the four great divisions of the Sutta Piṭaka. Etymologically the name indicates a series of discourses of graded importance. The first two parts deal with what may be called elementary lessons in Buddhist catechism. The third part rises in interest and importance and forms an essential contribution towards the study of Buddhist ethics and philosophy. The three parts which were printed by the Pali Text Society in 1885 forms the basis of the present translation by Mr Gooneratne of Ceylon. The translator is not unknown to Pali scholars, having been responsible for some texts among the Pali Text Society's editions. In the present work he shows rare powers of judgment, combined with a lucid expression. The fact that the work was undertaken in consultation with the most renowned Pali scholars of Ceylon should go far to enhance its value. Apart from this, we have found the work quite instructive and scholarly. We especially commend the sprinkling of valuable notes taken from the commentary. But in justice to impartial criticism we must point out that we have detected occasional small blunders and renderings which sound forced and weak beside the original. For instance, on page 4 paragraph 9 the sentence "Bhikkhus, I do not perceive any other cause which does not produce unfixedness and restlessness as doth a settled mind" should not be allowed to stand, as it tends to mystify the plain sense of the original, where a settled mind does *not* produce unfixedness and restlessness. Another thing we find fault with is the way in which the translator has rendered a word in Pali by different words and phrases in English, where there is no necessity to do so. Thus *Ayoniso Manasikāro* is translated on page 4 paragraph 5 as "undevout reflexion" and on page 13 paragraph 6 as "unwise contemplation"; *appicchatā* on page 16 paragraph 7 as "contentment" and on page 17 paragraph 6 as "Non-greed"; *Santutthitā* on page 16 paragraph 9 as "satisfaction" and on page 17 paragraph 8 as "content." Such unnecessarily different renderings throw confusion on the exact signification of Pali words, especially as Pali is a language comparatively unknown. On page 16 paragraphs 16 and 17 the negative has been omitted in the second clause. The sentence in paragraph 16 should be "applying oneself to doing bad deeds and not applying oneself to doing good deeds"; the paragraph 17 should read, "applying oneself to doing good deeds and not applying oneself to doing bad deeds." But these are small spots on the surface and we congratulate the author on his scholarly work.

M. T.

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